BULLETIN

MADRAS DEVELOPMENT SEMINAR SERIES

VOLUME VI No. 5 & 6 SPECIAL NUMBER MAY - JUNE 1976

74, SECOND MAIN ROAD, GANDHINAGAR,
ADYAR, MADRAS-600 020.

MONTHLY BULLETIN

Vol VI No. 5 & 6

CONTENTS

		Page
1. Editorial—Some Highlights		
I. General Economic Scene	...	253
II. Agricultural Development	...	272
III. Industrial Development	...	276
IV. Education, Science and Health	...	281
V. Employment	...	286
VI. Other Items	...	288
2. Planned R & D by *Dr. Basu John, I. I. T. - Madras*	...	294
3. Some Issues Raised by Coastal Sedimentaries	...	297
SPECIAL ARTICLE		
The Sixth Census of Social Science Research in Tamil Nadu	...	S. 1–25

EDITORIAL—SOME HIGHLIGHTS

I General Economic Scene

State :

Fiscal : Further to the 1976-77 State Budget passed by the Lok Sabha reported in the last issue (p 189), Lok Sabha also passed at the end of March the State's supplementary demand and grants totalling Rs. 69.72 crores. The President also enacted at the end of March, the Tamil Nadu Additional Sales Tax (Amendment) Act 1976, under which, in accordance with the provisions of the approved budget, the additional Sales Tax at the varying rates ranging from 0.4 per cent where the taxable turnover is Rs. 3.5 lakhs to 0.7 per cent if it exceeds Rs. 10 lakhs in levied instead of the tax paid by him. Following the Budget, also, the President enacted the Tamil Nadu Motor Vehicles Taxation Act, the additional Assessment and Water Cess Act and the Commercial Crop Assessment Act. The Income Tax authorities report that under the Voluntary Disclosure Scheme (See Vol. V pp. 77 and 130) 12,309 disclosures were made in the State involving Rs. 157 crores. Out of the Rs. 19.41 crores due in tax, Rs. 11.37 crores had been collected by March 1, and Rs. 2 crores invested in approved securities.

Prices, drought and Food Stocks : Under the good harvest of Kuruvai, Samba, Thaladi and Navarai referred to in Vol. V. pp. 19, 89, 142 and 211-212 and the action taken by government, prices of foodgrains and food items and daily consumer articles began falling from February. Traders report a contracting demand for soaps, talcum powder, hair oils etc. In early March the government reduced the price of coarse and medium rice for card holders from Rs. 1.90 to Rs. 1.60 per kg. and fine rice to Rs. 2 instead of Rs. 2.10 per kg. In fact in April the free market price of fine and superfine rice was lower than the price at which they were selling in co-operatives and government retail shops. By the end of April, the government had procured 6.5 lakh tonnes of rice, in excess of its target ot 5 lakh tonnes and was offering 1.5 lahh tonnes to the Union government pool. The storage of this large quantity of foodgrains was becoming a problem — the FCI piling up stocks in any open land belonging to it and covering it with black polythene sheets. To prevent distress sales, the government continued to purchase paddy at the Union government rates (Rs. 74, 78, 83 and 86 per quintal of the 4 varieties, See Vol. V p. 594) and on April 21 issued the Tamil Nadu Paddy and Rice order under which the government alone was to purchase rice and paddy in

the entire disrricts of South Arcot, Thanjavur, Tirunelveli, Kanyakumari, Chingleput and in certain notified taluks in Coimbatore, Nilgiris and Madurai. It lifted the restrictions on movement of paddy within a district on March 10, but continued inter-district restrictions. Following the opening of multi-purpose distribution centre at the Indian Oil Petrol Bunk at Kinathukidavu in Coimbatore district, the government announced the opening of 25 such centres during 1976. The removal of intradistrict restriction has resulted in a decline in prices of foodgrains, pulses and essential goods. In Thanjavur the price of a bag of 57 kg. of paddy declined from Rs. 57 to Rs. 42, maize from Rs. 100 to Rs. 85 per 100 kg. bag, toor dhal from Rs. 224 to Rs. 180 and green gram from Rs. 190 to Rs. 130, coriander from Rs. 135 to Rs. 125 per 40 kg. bag and tamarind from Rs. 100 to Rs. 85 per 50 kg. bundles. To further control prices, the government on April 12 issued an order regulating the price and quantum of 10 food articles served in the restaurants and was taking steps for their strict enforcement. Also on April 20 it issued a Guest Control Order limiting to 50 the number of guests to be invited to a social function and to 200 those invited to a wedding or a funeral meal. It is also using the co-operative canteens, public sector and other government establishments to provide a meal for Re. 1. There has thus been a serious attempt to bring prices down, particularly of articles in use by the poor and the common man. In relation to the drought areas in Tiruchi, Dharmapuri, South Arcot and Pudukottai districts, the government has granted the farmers the same land revenue remission granted in January to the drought stricken areas in Tirunelveli, Ramanathapuram, Madurai, Salem, Coimbatore and North Arcot districts (See Vol. VI p. 126). Also local cesses were remitted. The government has sanctioned 2,400 deep bore wells which will be put up at the rate of 800 wells per month to cover these water scarce and endemic areas in the 8 districts. Towards the end of April, a 3 member Union government team visited the State to assess the quantam of relief needed for the drought hit areas.

Water : Water supply to city was increased from 41.5 million gallons per day in March to 45 million gallons per day by mid April. The long term plan for bringing 15 TMC feet of Krishna Water (See last issue p. 192) was the subject of technical discussions by officers from Tamil Nadu, Andhra Pradesh, Maharashtra and Karnataka through March, leading to a formal agreement signed in New Delhi on April 14 under the Chairmanship of the Union Minister of Agriculture. Under the agreement, the officers of the 4 States are now authorised to decide the location of the diversion of the Krishna Waters and the means of its conveyance to the Madras City. Andhra Pradesh is designing its Somasila project at a cost of Rs. 40 crores to facilitate the water supply to Madras and irrigate simultaneously the upland areas of Nellore district. Further the MMDA study of the water needs of the metropolitan areas by 2000 AD is being completed by the end of the year. The report makes an assessment of the existing water supply system in the city with proposals to increase the supply and improve and upgrade the system and optimise its use. One immediate prospect being explored is obtaining 40 million gallons of water from the Neyveli belt. At present the mining operations yield 40 mgd and is used for irrigation. With the second mine cut in the offing and through rationalising the utilisation of the existing water, the city supply can be augmented by 40 mgd from this source. The pipelines prepared for the Veeranam Project can be used to

the extent of 30 per cent to bring Neyveli water to Madras. And there is Veeranam Project to increase the city water supply. Thêre is also the World Bank interest in the Rs. 20 crores Periyar-Vaigai Modernisation Scheme which is part of the World Bank's double interest in irrigation development and rural water supply sources. The Bank's sector paper on rural water supply makes many valuable and valid proposals for a fast developing, viable rural water supply scheme which can be applied to this State. Further this government has earmarked Rs. 7.70 crores in the current year for carrying out repairs and improvements in irrigation and drainage channels in the various river systems in the State. This should also improve the use of water and increase the available quantum.

Power : The good power situation in the State continuing in March and April was marked by four events. First, the fifth 110 MW unit at Ennore Thermal was commissioned on April 10, resulting in a total generation of 360 MW, the first four units producing 290 MW. A Union expert team visited the station and made recommendations on its operation, resulting in the 80.6 per cent capacity use. Second, Neyveli was producing 9 million units per day and from March 27 generating 450 MW, which from April 25 was reduced to 400 MW, as one of 50 MW oil fired units was shut down for overhaul purposes. Third, with the increased provision for power in the 1976-77 budget to Rs. 70.18 crores (from Rs. 40 crores in 1975-76), the tempo of work in the 600 MW Tuticorin Thermal Project is being speeded upto ensure that its first unit will be commissioned in 1977-78, Kundha Stage IV is being helped with a further Rs. 0.31 crore Canadian loan in addition to the Rs. 3.5 crores already provided, and two new REC projects which will extend electricity to 85 additional villages, making a total of Rs. 20.31 crores from REC to the State covering 64 projects and 2,703 villages. Kerala has agreed to supply 400 million units of power to Tamil Nadu and 100 units to Karnataka through the Tamil Nadu grid. Fourth, the State Electricity Board faces a serious financial situation. It has been in the red for several years and for 1976-77 expects a loss of Rs. 32 crores. Its estimated resources is Rs. 161.82 crores and expenditure Rs. 193.84 crores, leaving a gap of Rs. 32.02 crores. As a resut, power rates are being increased for HT and LT industries and commercial establishments, and an increase of Rs. 2.50 per HP per month on agricultural pumpsets. Even so, this increased charge will bring Rs. 10 crores, leaving a net deficit of Rs. 22 crores. Part of the deficit is due to increase charges from Kerala from 9.5 paise per unit to 12.4 paise, and Neyveli at 40.4 paise due to oil firing and a part due to over employment of excess staff and poor management. The Board is making a special effort to recover dues (for February Rs. 16.79 crores was collected), surprise inspection to chech unauthorised extensions and misuse of tariff, energy thefts in rural areas etc. For the country as a whole 20 per cent of power output is lost on ground of theft, transmission and distribution losses every year, the State's share being 22 per cent (being the seventh highest after Rajasthan 29, Haryana 28, Bihar 27.2, Punjab and AP 25 and Kashmir 24). This is about double of what is normal and action should be taken to conserve this loss. For the year, the Union government is giving the Board Rs. 44 lakhs as loan assistance for intra and inter-State power lines, and LIC Rs. 5.22 crores.

For the country, the power situation was comfortable except in Karnataka. In 1975-76 power generation increased by 13 per cent, involving creation of 890 MW of additional thermal and 910.1 MW new hydel capacity, five units being created in UP and Maharashtra and the Idikki Project in Kerala improving the Southern power position. Generation was 251.61 million units a day. The Energy ministry also reports that nearly half of the 439 million rural people have come under the rural electrification programme, 1,72,402 villages being electrified by March 31, 1976. Tamil Nadu stood first among the States with 99.4 of its village population covered. The late February meeting of the Southern Regional Electricity Board meeting at Hyderabad established the principles and methods of sharing surplus power among the Southern States and set up a working group of engineers to execute the decisions. This principle of sharing surplus power between States is being gradually extended also to other regions. In March the 110 MW unit of lower sileru Hydro electric project in AP was inaugurated, and the Saudi Arabian loan assistance to the Srisailam and Nagarjunasagar hydro-electric projects was finalised. In UP, work on 2 thermal projects to generate 220 MW was speeded in order to commission the projects by mid year. For the year, Rs. 78 crores have been allocated for power development in the Union sector plus Rs. 19 crores for DVC. The Union government's plan to build 4 super thermal plants (See Vol VI p 73) is on the point of being finalised with the World Bank team. The Department of Science and Technology is working with BHEL on the indigenous development of 500 MW sets, though the super thermal units will start with us 200-250 MW sets as noted in Vol VI p 127, which are being fabricated at BHEL. The question of the location of the Southern Super Thermal Unit—at Ramagudam in AP or Neyveli in Tamil Nadu is still under discussion. Other R and D power programmes are on the single wire earth return system which can reduce power transmission losses in REC programmes, and the development of transistorised relays to protect transmission lines and generation transformers.

Housing : The Tamil Nadu Housing Board received in April Rs. 99 lakhs from HUDCO for building 797 houses at Ashok Nagar, Mettur, Tirupattur and Chidambaram and for LIC 156 at Vyasarpadi for ESW, 80 at Mettur, Tirupattur and Chidambaram. The Board has also formulated new neighbourhood schemes to house one lakh families involving land acquisition of 10,000 acres at Besant Nagar, Arcot Road, Poonamallee High Road, New Avadi Road, Pallavaram and Chromepet during the next five years. In 1975-76, 10,000 units have been constructed and in the current year 5,000 will be completed. The Board has taken up Rs. 1.43 croros worth of land development works for setting up satellite towns at Manali and Maraimalai Adigal Nagar under the MMDA plan. Work under this plan has started over 407 acres at Manali involving laying of roads (Rs. 45 lakhs), cross drainage and culverts (Rs. 13.5 lakhs), street lighting (Rs. 4.86 lakhs), drainage (Rs. 40 lakhs) and water supply (Rs. 25 lakhs). Similar work over 306 acres for industrial and 195 acres for residential use is underway at Maraimalai Adigal Nagar. A World Bank team was in the city in April/May undertaking a detailed appraisal of the MMDA projects, including the regulations for land use, infrastructure facilities, industrial policies and traffic flow and highways—for all of which a Bank loan of over $ 50 million is being negotiated. A number of industrial firms, India Cements, SPIC, D Chemicals, the Tuticorin Chamber are adopting two

or three hamlets each in order to finance their total development. On the building front, the State government towards the end of April set forth detailed guidelines for issue of building licenses, on basis of which the past 2½ months suspension of building activities, it is hoped, will be ended. But the guidelines involve such a complex set of procedures to secure a building license, that the extent of relief for this crucial sector is in some doubt.

Transport : The Madras port, which is handling 5 to 8 lakh tonnes of foodgrains annually has under consideration building a silo of 30,000 to 35,000 tonnes capacity at its Jawahar Docks. This will ensure mechanisation and speedier handling of foodgrain arrivals and save FCI—and ultimately the consumer—money now paid out as demurrage. Also an office of SAIL International is being opened in Madras so that the port can be increasingly used for the country's steel exports. In March and April, 37,800 tonnes of pig-iron were shipped through the port, along with re-rollers and re-rolling products which will be sent abroad in increasing quantities from the State. On the railways development front, the current year will see little expansion, as the major project of the 158 KM Tirunelveli-Trivandrum line with a branch from Nagercoil to Kanyakumari has been allocated only Rs. 73 lakhs in the budget. The project costs Rs. 22 crores, and so far only Rs. 9 crores have been spent. This means there will be little progress on this line and on railway development generally. As will be noted later there is need for re-ordering our priorities and investing more in the railways. On the road transport side, the State government announced at April end that it has granted 250 national permits for lorries to ply throughout India. IDBI and commercial banks are providing financial assistance to new entreprenurs holding national permits to purchase new truck chassis. RBI has raised the ceiling limit on credit facilities to transport operators from Rs. one lakh to Rs. 1 50 lakhs. The effect of all this on railway revenues will need to be watched, because it may be another means of draining away high rated traffic from the railways. To meet the increased cost of fuel, spare parts and wages, the government raised bus fares in the city and the State from 15-20 paise per stage in city and 5-8 paise per KM for the mofussil buses. Also a traffic control and planning centre working through a net work of radios, television cameras and computer operated master control is being installed to regulate traffic in the city. The city's hard pressed telephone system (using 65,293 lines out of a maximum of 76,785) was further improved with the installation of the sixth 3,000 line modern cross bar telephone exchange in mid March.

Social Legislation : The moratorium on repayment of loans by agricultural and non-agricultural debtors (See Vol VI p 126) was extended by 2 ordinances in early March upto January 15, 1977. Thus those who had contracted loans during last year's drought have been granted relief. A third ordinance also granted relief from payment of interest during this period. Also an ordinance amending the Cultivating Tenants Protection Act 1955 removes the landlord's right of resumption of land from the tenant on grounds of personal cultivation. This loophole which has been used to evict a number of tenants has now been plugged. Again over 1,500 lift irrigation societies which were mismanaged have been wound up, and in March, 14 co-operatives have been closed and placed under liquidators to straighten

out their mismanaged funds and functions.

National:

Fifth Plan : Now that the third Annual Plan is out of the way, work on the finalisation of the Fifth Plan which establishes the targets and the objecttves against which alone the Annual Plans can be measured and reviewed becomes urgent. In the process, attention may be concentrated on removing the short term and medium term constraints which now are a part of the whole planning process. On the outlay side, the first 3 years of the Plan have provided for an outlay of Rs. 18,604 crores and for the remaining 2 years there will be some Rs. 19,000 crores to Rs. 20,000 crores available. The physical targets will be lower than those forecast in the Draft Fifth Plan, not only because of the increased cost due to internal and external inflation but also because of the actual performance of the first two Plan years. In agriculture, as Fourth Plan target of 114 million tonnes is only likely to be achieved in 1976-77, the Fifth Plan target will have to be reduced from 140 million tonnes to 125 million tonnes. In industry against the target of 8-9 per cent, the first two years achievement is of the order of 3-4 per cent and similar short falls in individual groups for the plan as a whole must be reckoned with. The remaining years of the plan will have to concentrate on increasing the capacity of industries, as the improved performance in the last 2 years has been a function of increased use of existing capacity. There is also the employment generation problem which is a sizable one and the continuing imbalance of our external trade where exports have exceeded the 7 per cent target, while imports have exceeded even further this rate. The resulting increase in gross and net foreign aid changes the assumptions of the draft Fifth Plan completely. What will emerge is not a simple revision but a restructuration of the Fifth Plan and that is what the Planning Commission should be devoting its attention to.

1976-77 State Budgets and Third Annual Plan : A review of 22 State Budgets fo 1976-77 shows an effort at additional resource mobilisation of the order of Rs. 170 crores, leaving an estimated deficit of Rs. 200 crores, most of it a carry over from the previous year. The States will receive an additional Rs. 77.22 crores as their share of Union excise duties over last year's share. The agricultural sector is still largely untapped. The net position is that 5 States show a surplus of Rs. 14 crores, and 17 show a deficit of Rs. 214 crores. Consumer durables obtain some relief in West Bengal, MP, Rajasthan and Tamil Nadu, Sales Tax and Motor Vehicles tax are raised in 10 States, stamp duty and entertainment tax in 4 States. The larger share of the annual expenditure increase is in non-development expenditure, 9 of the larger States having to increase their DAs. The Union Budget for 1976-77, as noted in the last issue p 194 provides for a higher net transfer to the States at Rs. 3,762 crores compared to Rs. 2,812 crores in 1975-76. The sectorwise allocation of Central and State plans show industry at 29 per cent (Rs. 2,266.21 crores) being in the lead followed by water and power at 27.3 per cent (2,149 crores), while agriculture has a lower percentage (10.8 against 11.6 per cent last year) at a higher allocation of Rs. 850.6 crores. It is in the areas of what is called social services that the biggest percentage jump of 42 has taken place—raising the allotment from Rs. 803 crores to Rs. 1,303 crores. The Union

government has also undertaken an exercise of how much of the 1976-77 budget will be for financing the new Economic Programme – the 20-point programme (see Vol V p 257). It estimates that Rs. 2,160.8 crores will be for composents of that programme—Rs. 36.5 crores for land reform, Rs. 145.5 crores for minor irrigation, Rs. 606.5 crores for major irrigation, Rs. 1,265.9 crores for power. Rs. 11.1 crores for handlooms, Rs. 51.8 crores for co-operatives, Rs. 10.7 crores for house sites and Rs. 2.3 crores for the apprenticeship scheme. In this State's plan and annual budget, Rs. 93.1 crores is attributed in this manner to the NEP, which is a priority and should be fully executed.

Prices and Anti-inflation : The wholesale price Index on March 27 stood at 283.1, which was a return to the March 1974 level. The prices of rice, raw cotton intermediate products and jute manufactures registered slight increases, while wheat and raw tobacco and raw jute registered declines, the others remaining stable. The lag between wholesale and retail prices has been reduced, in February the wholesale price index was 288 while that for industrial workers was 290 and that for agricultural workers 292. The government met with manufacturers and established rules and conventions under which the budget tax reliefs are passed on to consumers. The public distribution and the consumer movements have been strengthened to ensure the price declines of essential commodities. The record agricultural output has helped foodgrain prices to take the lead in this price reduction, and the Bombay consumers index registers the country wide fall in the price of pulses, vegetables, oils and fruits. The prices of soaps, detergents, aluminium, utensils, plastic products, mill cloth, dry cells, blades, synthetic fabrics are being marked down as a result of the price trend. Also the display of prices by retail shops is being strictly enforced. On the credit side, RBI fixed 16.5 per cent as the maximum lending rate chargeable by commercial banks, inclusive of the 7 per cent levy on interest income from advance, with effect from March 15, which means in effect a ceiling of 15.5 per cent. Other rates, such as the Book rate of 9 per cent and the minimum lending rates at 12.5 per cent remain unaltered. As a result, the Indian Banks Association reduced the interest ceiling on over night call money from 15 to 12.5 per cent from March 26. This reduced rate also applies to 14 days notice money. RBI also fixed a ceiling of 14 per cent on commercial banks term loans for 7 years and more, and 15 per cent for loans between 3 and 7 years. The procurement price of wheat as of rice has been maintained at last year's level, as will be noted later. As a further follow up, RBI set up two committees to be chaired by Mr. R. K. Talwar and Mr. V. R. Desai to study the penal rates and service charges levied by banks and to evolve guidelines for its purpose, streamlining and rationalising the existing practices of the banks. Also to help reduce industrial project costs, the finance ministry has exempted as from March 18 from income tax, the interest received by banks from term loans for the purchase of plant and machinery. At the same time the Union ministry of Chemicals and Fertilisers announced substantial cuts in the prices of various brands of complex fertilisers. Thus the price front is being stabilised and action initiated to allow industry to expand its production by cutting back on the cost of credit. In March the Union government issued 2 ordinances separating accounts from audit in government to promote improved financial management and provide management information for better financial control and performance appraisal

of departments and departmental undertakings. The 2 RBI study groups on the Lead Bank scheme have also made a number of important recommendations to enable the banks to go ahead with the formulation and implementation of the area development programmes. Acting on these recommendations, the infrastructural facilities for the development of the areas and the industrial schemes themselves will be speeded and act as a further break on inflationary pressures.

Economy and Public Sector Performance : The government estimate is that for 1975-76 industrial growth would be 4.5 per cent, against 2.5 per cent in 1974-75 and 0.2 percent in 1973-74 The industrial growth rate for the second and third quarters of 1975-76 averaged 5.5 percent against the first quarter 0.7 per cent. Business economists in the country expect a 5 to 6 per cent industrial growth in 1976-77, some expecting a rise of 7 per cent in national income, if the industrial world would adjust itself to what has become a buyers market. The Asian Development Bank calling attention to better agricultural performance, increased industrial production due to higher electricity generation and lesser dependence as world market conditions in India forecasts a growth rate of 5.5 per cent in 1975 against 2 per cent in 1974. The official index of industrial production shows an increase of 8 per cent for December 1975 over December 1974, with the average for 1975 being 3.9 per cent compared to the 1974 average of 2.2 per cent. For the period April-December 1975 the index records a rise of 4 per cent over the 9 months in 1974-75. By December 1975 almost all industrial sectors were moving up including cotton, iron and steel, non-ferrous metals etc. CSO's figures for 1974-75 show a 1.7 per cent decline in per capita income, with a 0.2 increase in national income as reported in the last issue (pp 197-198). One disturbing aspect of the current economic trends is the relative terms of trade as between the farm and manufacturing sectors worsening for the farm sector. The Economic Times Research Bureau calls attention to the trend—as of December 1975 the ratio of index of manufactures to that of farm produce rose from 71 in April 1974 and 74.7 in April 1975 to 83.1 in April 1976. While agricultural prices have fallen in 1975-76 by 7.5 per cent, industrial prices have declined only by 2.1 per cent. Thus both the farm sector and the consuming public are paying relatively higher industrial prices and if this trend continues, it means the containing of inflation would apply mainly to the primary sector, leaving the secondary sector as a high price sector. Both production and social justice considerations suggest that this trend should be reversed. The record of the performance of the public sector units under the central government continues to improve their profits increasing from Rs. 313 crores in 1974-75 to Rs. 350 crores in 1975-76. The Annual report for 1974-75 shows that 54 per cent of the units are utilising more than 75 per cent of their, and record a capacity increase in inventories from Rs. 2,458 crores in 1973-74 to Rs. 3,204 crores in 1974-75 but with a decline in percentage from 4.3 to 3.9. The total value of output of the units increased from Rs. 6,795 crores in 1973-74 to Rs. 9,980 crores in 1974-75. The principles of integrated materials management were being applied successfully. The 15 public sector units under the Department of Heavy Industry finished 1975-76 with a total production of Rs. 751 crores, a 97 per cent achievement of the Rs. 777 crores target. For 1976-77, the units have been set a target of Rs. 850

crores. HEC recorded a small Rs. 25 lakh profit, Kalamassery units of HMT increased production by 55 per cent, Jessops and Triveni turned the corner, with BHEL once more topping the list with a 33 per cent increase in production at Rs. 415 crores. The Economic Times Research Bureau's review of the performance of the top 101 industrial units shows an increase in their assets by 21.1 per cent as well as increased sales and improved profitability. The lead in this good performance was that of the public sector units as noted in past issues of the Bulletin.

Steel : Steel output from the integrated steel plants during the first 11 months of 1975-76 increased to 5.16 million tonnes compared to the 1974-75 total production of 4.89 million tonnes. Apart from Bhilai and TISCO operating a high level of capacity use, the maximum growth was registered at Durgapur followed by Rourkela and IISCO. All units held a stock of 8,00,000 tonnes of saleable steel and pig-iron, which is 5,00,000 tonnes more than normal. Hence export plans are being firmed up at 1.5 million tonnes, bringing in Rs. 220 crores and reducing imports to Rs. 30 crores. For 1976-77, the steel production strategy is being export oriented with emphasis on quality and high value items like tor steel. Domestic demand is also rising and the stockyards are once more placing orders with the assurance that steel prices are not to be raised now. For 1975-76, steel output increased by 9 lakh tonnes at 5.778 million tonnes, with capacity use averaging 83.6 per cent, Bhilai, Rourkela and TISCO operating at 100 per cent. On this basis, it is planned that the total production of saleable steel for 1976-77 will be increased by 13.5 per cent to reach a target of 6.465 million tonnes, with the public sector share at 4.425 million tonnes (16.5 per cent increase) and an export target of 2.5 million tonnes or Rs. 250 crores. Bokaro's third coke oven battery was lighted in mid March which with the 2 other batteries gives it a combined capacity to carbonise 23.34 tonnes of coal. Also in mid April the second blast furnace of the public sector Bakaro steel plant was commissioned which will enable it to produce this year 7,20,000 tonnes of steel and 7,75,000 tonnes of pig-iron. Rourkela which is being expanded from 1.8 million tonnes to 3.5 million tonnes is also developing a separate Rs. 120 crores complex for the production of cold rolled grain oriented and non-grain oriented steel sheets. The restructuring of HSC was finalised at the start of April. Bhilai, Rourkela and ASP Durgapur are to become 3 separate and independent companies. Similarly the Durgapur steel plant will become a separate company. All these companies now became fully owned subsidiaries of SAIL. The coal washeries of the plants are being transferred to Bharat Coking Coal. The steel plants are now working to the optimum and they need to be backed by a revived economy and expanding exports.

Crude : Production of petrol in 1975-76 increased by 10.6 per cent to 8.283 million tonnes (7.490 million tonnes in 1974-75) and of crude by 9.8 per cent 8.33 million tonnes (7.58 million tonnes in 1974-75), due to intensified production efforts and rigorous management of the oil economy of the country. The level of crude imports which was reduced to 13.95 million tonnes and 2.7 million tonnes of petroleum products in 1974-75, was stabilised at that level in 1975-76, with the imports of petroleum products reduced to 2.74 million tonnes, due to larger indigenous crude output and

higher refining capacity within the country. The import bill was, however, a high Rs. 1,073 crores, with Rs. 17 crores being saved by using Indian vessels for crude imports. Consumption of Naphtha rose during the year by 12.4 per cent, HSD by 2.2 per cent, Kerosene by 16 per cent and cooking gas by 18.5 per cent. On the production side, ONGC accounted for the major output and an increase of 5.2 million tonnes, compared to the previous year's 4.5 million tonnes. For the current year, 1976-77, the petroleum ministry projects an increase in petroleum products consumption of 5.8 per cent (compared to the 2.2 per cent in 1975-76 and 1.3 per cent in 1974-75). This increase is not due to any letting up of the economy drive in the use of oil but to the new demands which industrial revival will make on the economy. For instance, units which have been identified by the Fuel Efficiency Committee's as those which should switch over from fuel oil to coal but which have not done so, oil supplies are to be stopped within certain time limits. For 1976–77, slight reduction in crude imports from 13.95 million tonnes last year to 13.5 million tonnes and petroleum products to 2.1 million tonnes is planned. The import bill will however be higher at Rs. 1,100 crores due to the 10 per cent oil price rise (see *Vol. V p. 658*). *Simultaneously* there will be an increase in consumption through increased domestic production which is expected to go upto 9.5 million tonnes (*half a million tonnes from Bombay* High) and the rationalisation of the product mix of refineries, yielding more middle distillates. Thus the total consumption of petroleum products is expected to be 23.65 million tonnes this year, against last year's 22 35 million tonnes. By April, agreements for imports of 1 million tonnes from UAE, 1.1 million tonnes from Saudi Arabia and 4 million tonnes from Iraq were announced. Againt this background, the intensification of domestic crude production becomes important. Commercial output from Bombay High started from April from the 4 development wells, while drilling on the other 11 wells is expected to be completed by December. ONGC has installed the production cum well platform and the mooring for the first 2 wells and is setting the shore installations in the Nava Sheva and other areas of Maharashtra to take delivery of the crude that will be transported by submarine pipelines. ONGC is undertaking seismic shooting in the new offshore oil structure at Bassein. On land, exploration is *continuing in the Northern* Himalayas, Kashmir, Gujarat and Kerala, with oil being struck by Oil India in its Arunachal Pradesh drilling. ONGC also has acquired the *first Indian made sea* going supply vessel built at the Vishakpatnam ship yard for transporting the drilling crew and rigs from shore base to the drill ships. In addition GSI has been permitted to acquire a drilling ship for offshore exploration of minerals in the Indian continental shelf, and the World Bank *has expressed interest in financing* oil exploration and production from proven reserves for the first time. Also the government has resumed discussions with *Oil India on its takeover, while British and* French oil companies have expressed interest in entering the exploration and exploitation field in this country. The situation as a whole is encouraging, though the official forecast that India will halve its oil imports by 1981 and increase its refining capacity to 35 million tonnes, will call for more effective and planned action in the production yield.

Coal : The 1975-76 coal production was 99.88 *million tonnes against the* pre-

vious year's 88.4 million tonnes. Coking coal increased from 19.6 million tonnes to 22.7 million tonnes and clean coal to 10.9 million tonnes. The total despatches during the year was 91.4 million tonnes (from 82.7 million tonnes in the previous year) because steel plants, power houses and cement unit increased their stocks to 19 days, 38 days and 32 days respectively and the Railway performed well, their daily loading increasing from 8,387 to 10,146 wagons. For 1976-77 the coal production target has been fixed at 108 million tonnes; the industry faces a real problem of plenty. There is the likelihood that production will be larger than the offtake by 10 million tonnes. As noted earlier, the major consumers—the railway, steel plants, power stations and cement units—have already built up sufficient stocks. There is also the increasing minimum overhead of the coal industry—in meeting the social needs of the workers, safety measures, new technologies, maintenance and manufacture of equipment and plant, training programmes and R and D—which must be met. And so there is need for the offtake during the year to continue to expand and this in turn will depend on the surge forward of the entire economy. Also exports of coal should be further developed and mechanised port facilities provided, given the fact that the unit price of Indian coal is one of the lowest in the world. The first 2 shipments of 55,000 tonnes to Europe in April can be built up to 3.5 million tonnes once the port handling is mechanised. From this point of view, the 10 year perspective plan now being developed is good and necessary, embracing all aspects of the industry—demand growth, marketing, exploration, mining technology, plant and equipment, transportation and telecommunication, man-power and training, labour welfare, benefication, ancillaries, diversification, utilisation and finance.

Aluminium and Copper : Aluminium industry also utilising 86 per cent of capacity under the integrated aluminium policy (see Vol. V, p. 659 and Vol. VI, p. 11), is facing excess of supply over offtake. Between April 1975 and January 1976, the monthly excess of production over offtake has been 1,500 tonnes in EC Aluminium and 2,000 tonnes amounting to 32,000 tonnes of unsold stocks. During the period, total production was 1.57 lakh tonnes and for the year is estimated at 1.8 lakh tonnes. With the reduction in the duty on non-levy aluminium announced in the budget (see last issue p. 195) the offtake of non-levy by State transport undertaking and other sectors should increase. Not only should the increased price of non-aluminium now be cancelled, there should be further reduction to enable the State transport units stop switching over to steel and raising their petrol consumption. Also the export programme should be further pushed. Hindustan Copper reports a 70 per cent increase in copper production for 1975-76—blister copper at 20,568 tonnes, wire bar at 11,662 tonnes and kyamite at 27,897 tonnes. Here again the offtake needs to be continually increased to meet the improved production performance of the industry.

Textile and Sugar : The textile industry consisting of 695 textile mills (409 spinning and 286 composite), employing over 1 million skilled workers has an installed capacity of 18.99 million spindles and 2,07,000 looms. Its 1975 production was 8,212 million metres and exports upto November was Rs. 201.8 crores. The industry estimates that it will have exceeded the 1975-76 export target

of Rs. 310 crores and accepts the current year's export target of Rs. 400 crores. It requests the government to transfer the responsibility for the production of controlled cloth to the handloom and powerloom sector within six months, and wants the exports cash incentive scheme continued beyond March 31. The World Bank report on these issues of the textile Industry to which reference was made in Vol. VI, p. 82, calls attention to the possibility of reducing the prices of cotton yarn and fabrics by reducing the number of varieties, and introducing specialisation in the industry. In fact, this specialisation will counter the trend to capacity under utilisation and lower machine and labour productivity, reduce prices and make Indian textiles more competitive internationally. Indian textiles are losing out in the international market because of the lack of specialisation and the rather poor quality of the cloth that is produced. Further there is also a difference of opinion between the industry and the Bank mission as to whether the mills should give up the production of controlled cloth from the point of view of productivity. With the expected shortfall in cotton production in the 1975-76 season by some 3 per cent, the need for increased productivity becomes urgent to prevent a price rise in textiles. The commerce ministry has set up a new Department of textiles to oversee the production, distribution, exports and development of all textiles and woolans and carry out the recommendations of the Marathe Committee to undertake a detailed cost investigation of the industry — which should assure both rationalisation and increased productivity. In regard to sugar, cane production this year is expected to be a little higher than last year's 60 lakh tonnes, which is an increase of 4.2 per cent over the previous year. Now the problem of paying the cane growers is exercising the Union and State governments. In every State cane dues are mounting and the State governments were instructed to see that all dues were cleared by the end of March, and on delays an interest of 12 per cent was charged and paid to the growers. To expand sugar production, the Southern States—Andhra Pradesh, Karnataka and Tamil Nadu—are setting up joint sector factories, particularly in areas where co-operatives have not fully developed. Against the Fifth Plan licensed capacity of 72 lakh tonnes, installed capacity so far is only 44 lakh tonnes, due mainly to the poor performance of the co-operative sector. The joint sector with 26 per cent equity by the State government, 25 per cent by the promoters and the rest by the public may mend this state of affairs. The other issue now under consideration is a review of the sugarcane control order of 1966 and its subsequent amendments which has favoured the mills and has affected the growers. This plea is made not only by the growers but also the mills who find their supply of cane dwindling. They have suggested a minimum price of Rs. 150 per tonne to help expand cane production. The other issue before the government is to fix a remunerative price for levy sugar and the Southern States demand that a uniform levy price should be fixed on a uniform basis for the whole country, like the uniform procurement price for wheat and rice.

Cement : The 1975-76 cement production was 17 million tonnes, compared to the previous year's 15 million tonnes. The modernisation scheme for the industry by reversing the wet to dry process at a cost of Rs. 21 crores will add one million tonnes in production to nine units. This is an interesting case where the opportunity cost of installing one million additional tonnes of cement would have

involved an investment cost of Rs. 65 crores. This does not rule out expanding capacity but certainly points to the need for working out the limits to such expansions and study of alternative means that might be pursued.

Agricultural Production: The news in March and April on the foodgrains front is on the whole good. The government estimates that the kharif procurement which by early March reached 5 million tonnes might touch 7 million tonnes by end of the season. Every State reports a good crop and an acute storage problem. Punjab, UP, Tamil Nadu, Haryana, Assam, Bihar, Kashmir and Rajasthan have fulfilled and in some cases exceeded their targets—Punjab at 11.32 lakh tonnes against a target of 9 lakh tonnes, UP at 6.2 lakh tonnes against the 5 lakh tonnes target, Tamil Nadu at 5.8 lakh tonnes, Haryana at 4.5 lakh tonnes against 3 lakh tonnes target, Assam at 2 lakh tonnes against 1.3 lakh tonnes target, Bihar at 53,000 tonnes, Kashmir at 40,000 tonnes Rajasthan at 24,000 tonnes, AP at 6.3, lakh tonnes, Karnataka at 1.3 lakh tonnes, MP at 2 lakh tonnes and West Bengal at 1.8 lakh tonnes. By March 1975 only 2.66 million tonnes had been procured. With the prospect of a bumper rabi harvest and heavy market arrivals, States are expanding their storage facilities—UP requisitioning sprawling palaces of ex-rulers, Orissa industrial sheds, Maharashtra requisitioning additional godown space. On rabi prospects, Maharashtra expects 3.5 million tonnes, Karnataka 1.1 million tonnes, MP 5.1 million tonnes and Tamil Nadu 3.7 lakh tonnes of samba. Haryana and Punjab which expected a bumper rabi crop had an unusual spell of winter weather which delayed the maturing of the wheat crop and which suffered a further damage from heavy rains and hail stones; so that the Punjab government has had to embark on a Rs. 10 crore relief programme for its farmers. With the good harvest this year, it is not surprising that the APC has recommended the same procurement price for wheat as that of the last season—Rs. 105 per quintal—and that it has been accepted by the States and established as the procurement price by the Union government. For the coming season APC has recommended a procurement target of 5.2 million tonnes against the 1975-76 target of 5.5 million tonnes, because though it forcasts a rising trend in wheat production, it believes that procurement by States will level off and fall slightly in the season ahead. The country will have 11 million tonnes in stocks this year (7 million tonnes as buffer and 4 million tonnes as operational stocks), and hence FCI is working on creating the necessary storage space for this order of stocks—dispersing the godowns in various States—an additional 40,000 tonnes in Tamil Nadu, 45,000 tonnes in AP, 30,000 in Kerala, using in CAP—cover and plinth system. The National Commission on Agriculture in its report to Parliament in March draws a very optimistic picture of our future agricultural performance. It forecasts that foodgrain production will reach 230 million tonnes by 2001 and with the demand being between 205-225 million tonnes, there will be a sizeable surplus available for export. According to the report, the country will in every other article be in surplus—oils 9.7 million tonnes (demand 8.3—10.2 million tonnes), sugar and gur 32.5-41 million tonnes (demand 24-29.9 million tonnes), cotton 24-29.3 million bales (demand 10-17.2 millon bales) jute and mesta 16.7 million bales (demand 6.8-11.8 million bales) and tobacco 692 million tonnes (demand 4,79,000-5,90,000

tonnes). By 1985 foodgrains production should reach 150 million tonnes, requiring 7 million tonnes of fertilisers. In March, the government reduced the price of urea from Rs. 1,850 to 1,750 per tonne, muriate of potash from Rs. 1,085 to Rs. 900 and phosphatic fertilisers from Rs. 1, 250 to Rs. 1,205 per tonne. There was a temporary decline in the offtake of fertiliser until the new prices were announced so that fertiliser stocks rose to 1.86 lakh tonnes by the middle of May. FCI expects a 30 per cent increase in fertiliser demand for the coming season, and to ensure reduced stocks, the Union government has asked 6 States including Tamil Nadu and the tea, coffee and rubber estates not to lift imported fertilisers from the pool allotments. For jute, APC has recommended a uniform minimum support price of Rs. 140 per quintal for the 1976-77 season, which is Rs. 5 above the minimum prices. It estimates raw jute production for the current season at 44.6 lakh bales and hopes that the increased support price will increase raw jute production to 56.87 lakh bales. The commission in a report on forest and forest policy has recommended tightening forest laws against encroachment, illicit cutting and grazing, and the system of harvesting forest produce through contractors. Its programme for forest planning should be put into operation by the Union and State governments without delay.

Exports : As forecast in the last issue p 206, the trade deficit for 1975-76 is likely to be largest ever. For the first 11 months of the year, the deficit amounted to Rs. 1,218 crores, compared to the 12 month 1974-75 deficit of Rs. 1,164. For the year, the estimate of the gap is Rs. 1,400-1,500 crores. This is in spite of a good export performance under which the export target of Rs. 3,600 has been exceeded and is likely to be Rs. 3,800, wh ch is good at a time when world trade fell by 9 per cent for the year. The rate of increase has been 16 per cent against the 28 and 31 per cent increase in the previous 2 years—which is an indicator that the growth rate is slowing and the rate itself is in value and not quantum terms. For 1976-77 the target is fixed at Rs. 4,350 crores, with the aim of reaching Rs. 4,500 crores. The liberal import policy announced on April 14 for 1976-77 has the purpose of boosting exports. The new policy places on open general license the imports of some steel items which have no indigenous angle, all imports of raw materials, components and spares needed for the free trade zones, and imports of leather machinery, a 20 per cent higher license for small scale industries and for new units plus free foreign exchange for upto Rs. 50,000. The automatic licensing introduced last year is continued for actual users and the procedures for every one simplified. Also the supply of canalised items to actual users by the canalising agencies is provided. Exports are to be increased by more emphasis on manufactures, semi-manufactures and processed goods exports, goods exports, selectivity in choice of export markets and on project exports and not through sole reliance in product exports. The Technical Development Fund created by the Ministry of Industry and Civil Supplies in March end to speed up modernisation of industries will improve our foreign trade profile by increasing indigenous production of commercial vehicles, tractors, forgings, foundries, textile machinery and machine tools. The major items in our imports bill are oil, which for the 12 months is placed at Rs. 1,170 crores, plus foodgrains and fertilisers. This part of the

import bill for next year should be reduced on all 3 counts—as internal crude production rises, as foodgrains imports are cut to the bone with the good harvest, and with internal fertilisers production picking up. Similarly non-ferrous metals import should be further lowered (below the Rs. 63 crores for this year) and machinery imports (below the Rs. 90 crores reduction for 1975-76). In other words, the trade policy should be one of all out expansion of exports on the basis of the 3 point policy referred to earlier and a reduction of Rs. 600-700 crores in the import bill, despite the import liberalisation policy. The upward reveluation of the rupee which took place twice during March and April (and five times in 7 months) is an indication on the one hand of the strength of the rupee *vis a vis* the sagging pound sterling and of the comfortable reserve position of the RBI which has been rising steadily over the year of Rs. 678 crores exclusive of gold and SDRs. This is also an occasion to settle the Rupee-Rouble rate which has been the subject of discussion for over a year. With the delinking of the rupee from sterling and linking it to a basket of currencies, agreement should be reached soon on a realistic rate of 8-9 to a rouble. On sectoral exports, the Engineering Export Promotion Council which increased its 1975-76 target to Rs. 400 crores from Rs. 300 crores, plans to continue the increase to Rs. 430 crores in 1976-77, Rs. 500 crores in 1977-78, Rs. 600 crores in 1978-79 and Rs. 1,000 crores by 1985-86. It is now exporting its products to 132 countries. STC whose export turnover was Rs. 970 crores in 1975-76, and with its subsidiaries amounts to Rs. 1,082 crores, plans to increase it further this year with increased shipments to the gulf countries, Egypt and the North American markets. To the gulf countries, our exports have jumped from Rs. 95.79 crores in 1972-73 to Rs. 489.45 crores in 1974-75. Our imports however from there have grown from Rs. 206 crores to Rs. 1,112 crores in that period. For 1975-76, lac exports rose by 30 per cent to Rs. 15 crores, while iron exports are expected to decline by 20 per cent at 12 million tonnes against the target of 15 million tonnes—due mainly to the recession in the world steel industry, and fall in Japan's offtake. That unit value realisation however is improving at Rs. 110 per tonne against the previous Rs. 90 per tonne. Under GSP, our exports will get a tariff advantage of 5 to 35 per cent for 2,700 items in the US markets. In jewellery for example India can quickly expand its exports to the US, where India's share of its $ 38 million imports is only one million. India's total exports to the US was $ 560 million in 1975. It could be increased by 25 per cent, with the economic recovery in the US and the wise use of GSP by our exporters. Leather, coffee and tea exports are also expanding and fiscal policy must ensure a further expansion of this trend.

Aid: On the basis of a good and favourable World Bank Report, the Aid India Club meeting in May in Paris is likely to act favourably on the aid recommendation for 1976-77 which will be higher than the $ 1,775 million pledged for 1975-76. The high light of the report is India's successful containment of inflation, its industrial and export promotion policy and development of the country's infrastructure. The government computes that the external assistance for 1975-76 which amounted to $ 1,700 will become $ 2,500 or Rs. 2,150 crores, if the Iran and Kuwait project loans are added. For the year ending March 1976, disbursement amount to Rs. 1,600 crores. For the first nine months it was Rs. 1,000

crores of which Rs. 901 crores was from the consortium countries. With total reserves of $ 1.6 billion, India will not be able to draw any further on the oil loan facility, from which it drew 201 million SDR in August 1975. Hence though the trade deficit is serious, the payment position is not too difficult for the country. In view of the reserve position to Rs. 1,700 crores referred to earlier, India is repaying a part of the IMF loans totalling Rs. 753 crores at the end of March. Also the country will be repaying *in goods* the 2 million tonnes of wheat of Soviet loan (see Vol III p 796) received in September 1973, which will *not disturb* the buffer stock of the country. March also saw resumption of Indo-Canadian co-operation in *nuclear development* interrupted since last summer (see Vol IV pp 37 and 142).

International :

Bangla Desh : At the end of April an Indian team of scientists and administrators proceeded to Dacca to discuss the Farakka barrage question which had become the subject of disagreement between the two countries during the past 3 months (see last issue p 208). *It is* to be hoped that a settlement will be arrived on this issue on a *fairly long term* basis. Bangla Desh also raised the price of jute by £ 3-5 per tonne *from early* March on the advice of the Jute Export Price Advisory Committee.

Sri Lanka : On March 24 *India and* Sri Lanka signed an agreement delineating the maritime boundary between India *and* Sri Lanka on the Bay of Bengal and Gulf of Mannar. This is the first agreement which gives official *recognition* to the concept of a 200 mile economic zone. Agreement was also reached on the fishing rights of the 2 countries.

Pakistan : India and Pakistan have resumed negotiations in mid May with regard to resumption of air and road traffic, over flights and diplomatic relations generally. The two governments have also under consideration the development of a common strategy to fight the reviving malaria menace in the 2 countries.

World Monetary Reform : On the world monetary reform front, five developments took place in March and April. First as noted earlier, the pound sterling continued to fall steeply in the exchange market reaching $ 1.811 to the pound—being a 38.2 per cent depreciation in comparison to its exchange value in December 1971. The Bank of England intervened from time to time to prevent this steep decline, but finally allowed the pound to find its level. Second on March 14 the French government pulled the Franc out of the European snake system, under which differences in rates between the currencies of the participating countries were limited to 2.25 per cent. The Bank of France spent over $ 1,200 million in Foreign exchange to *support the* rate, but finally gave up, leading Belgium and Holland also to suspend their *special* relationship to the snake (under which they fluctuated within a narrower margin of 1.5 per cent). Third, the IMF released in early April the amended articles of agreement under which gold is deprived of any official role *in the world* monetary system and the States are free to choose the exchange arrangements they want. India ratified this amendment as well as that calling for an increase in the quotas of member

countries, under which India's quota is raised from 945 million SDRs to 1,145 million SDRs, though its percentage share falls from 3.22 to 2.93. Under this amendment, the Fund's total resources will increase from 29 2 billion SDRs to 39 billion SDRs. Fourth while the Fund has kept its option on gold sales open, in the sense that as at early April no actions to sell its 25 million ounces of gold had been held and any bids approved, the prospects of the IMF oil facility are receding. In 2 years it collected 25 per cent of the $30 billion needed for the purpose, in the second year it was West Germany and Switzerland which made the contributions, not the Arab oil countries and two thirds of the lending went to the industrialised countries and not the most seriously affected countries. What is urgently needed is agreement on a system under which the most seriously affected countries are provided with the oil facility of $30 billion a year. Finally, the Kingston IMF decisions on world monetary reform (see Vol. VI, pp. 140-141) are critically reviewed by the UNCTAD secretariat in its report to UNCTAD IV, as being incomplete, not improving the existing disorder and simply legalising existing national practices. The compensation facilities proposed by the Kingston meeting are poor and the payment gap of the developing countries are left completely unattended to. The UNCTAD reports recommend (a) liberalised financing facilities to meet the trade deficits of the developing countries, (b) international reserve creation, particularly the windfall profits of gold to be brought under international control, (c) a further increase in IMF quotas and (d) removal of any restriction on developing countries using trade and payments restrictions to avoid loss in their production.

UNCTAD : In March and April a series of reports were issued by the UNCTAD secretariat preparatory to the UNCTAD IV meeting in Nairobi in May. In a mid March report, a comprehensive strategy for the expansion and diversification of exports in manufactures and semi-manufactures from developing countries to realise the target of 25 per cent share in world industrial output (see Vol V p 214) has been formulated. The strategy involves (a) increased capabilities of the developing countries in the exports of manufactures and semi-manufactures, (b) improvement of import conditions of both socialist and non-socialist developed countries, (c) expanded trade and industrial co-operation among developing countries, (d) contribution from transnational co-operations and control of their restructive business practices and (e) new forms of industrial collaboration at the inter-governmental and inter-enterprise levels regarding industrial development and trade. At the end of March, the report of the 68 member UNCTAD Board showed that the rich and poor nations could not reach agreement on means of promoting the economic development of developing countries through acting on the UNCTAD report of stocking of coffee, rubber and other commodities as a means of stabilising export earning of developing countries and assuring regular supplies to the commodity consumers. The UNCTAD proposal was for an initial $ 3 billion fund for stocking 10 commodities-cocoa, coffee, copper, cotton, jute, rubber, sisal, sugar, tea and tin. For the Fund, $ one billion is to be in subscriptions from producers and consumers, and giving both voting rights like equities in the Fund, and the remaining $2 billion to be financed by loans from the World Bank, IMF and OECD countries. The Fund would lend money to commodity organisations operating these stocks, and so give both developed

and developing countries a share of responsibility in policy *making.* This proposal will be one of the main points for decision at UNCTAD IV. The US declaring itself against a global approach to the commodity problems, states that it is studying creating a new international body to stimulate investment in commodities of the developing world. This seems unnecessary as the existing international institutions can operate the system. The commonwealth group of 10 experts (see Vol. V, p. 406) supports the UNCTAD *report, particularly* that an expansion and diversification of trade of the developing countries and calls on the industrialised countries to speedily remove restrictions *on the imports from developing* countries. They have also recommended improvements in compensatory financing facilities, relief of debt services, enlarged ODA transfers and arrangements for increasing real export earnings.

World Trade : As noted earlier internatioal trade declined in *quantum* with a small rise in value during 1975. The quantum of trade declined by 6 per cent in 1975 compared to 1974, and in value *terms the increase* was 3.9 per cent, with imports at $ 905 billion ($ 854 *billion in* 1974) and exports at $ 880 billion ($ 847 billion in 1974). As a consequence the *world trade deficit widened to* $ 25 *billion* in 1975 compared to $ 7 billion in 1974. Some 70 *per cent of world trade is by the* industrialised countries, *where inflation* slowed the rate of increase of exports from 34 per cent in 1974 to 6 per cent in *1975, while the restrictive policies* followed by them to combat recessionary trends slowed the rise in their imports to 0.5 per cent. In this context it is not *surprising that* the non-oil producing developing countries faced the most serious imbalance—their exports declined from $ 92 billion *in 1974 to* $ 90 billion *in* 1975 (—2.2 per cent) while their imports remained stable at a 14.9 per cent rate of increase ($127 billion in 1974 and $139 billion in 1975). The largest deficit among the groups was that of the developing *non-oil producing countries* amounting to $ 45 billion which was an increased deficit of $10 billion over that of 1974.

Law of the Sea Conference : The UN law of the sea conference (see Vol. V, pp. 346-347) which resumed its third session in New York in April was trying to reach agreement around a draft treaty which states that the high seas will start outside the economic zone of a coastal state, and over the economic zone the State *will have* exclusive *sovereignty*. The US, UK, Soviet Union, EEC Countries and Japan and the land *locked countries* were not able to accept this definition and wished to make the economic zone a part of the high seas, over which there will be freedom of the seas. The current session due to end on May 7 will *not* be able to reach agreement of this *crucial issue and* is likely to propose that a further session be held in Geneva in July of this year. India also proposed at the conference that warships, nuclear ships and vessels containing nuclear materials should notify the coastal state concerned prior to *transiting their territorial waters.* This again is not acceptable to the major powers and there is opposition to it developing. The only gain so far seems *to be the emerging agreement* that 12 nautical miles should be the width of the territorial sea over which the sovereignty of the State will be exercised. Even on this, the base line from which the 12 miles will be calculated is subject to some very complex definitions.

World Foodgrains : The International Wheat Council has increased its 1975 estimate of world wheat production to 351 million tonnes, which should be compared to the production of 367.9 million tonnes in 1973 and 353.2 million tonnes in 1974. It retains its estimate of 1975 Soviet wheat production of 67 million tonnes, supplemented by an import of 11.5 million tonnes. Taking a long term view, FAO forecasts a third world gain shortage of 85 million tonnes a year by 1986, involving annual purchases of foodgrains of $ 17 billion by the developing countries. There is need for a continuing increase in foodgrains production in all countries, and improved distribution which reaches the poor majority in every country. Alongside the International Fund for Agricultural Development (see Vol. VI, p. 209) now amounting to $ 1.17 billion will have to be continued and strengthened to increase its capacity for loans to food deficit countries to expand their grains production.

Employment and Population : ILO is calling a world conference on unemployment in June in Geneva to review the 1975 profile that 40 per cent of the people in the developing countries had no employment or had one which did not bring them sufficient income. The ILO paper for the conference proposes shifting the Plan focus of countries from GNP growth to removal of poverty, which with structural changes and attainment of social targets can result in a 6-8 per cent growth per annum by 2001. In this new development strategy proposed, employment will be engendered if the minimum family needs of food, housing, equipment and clothing are met and essential community services like safe drinking water, sanitation, public transport and health and educational facilities are provided. A counterpart to the employment problem is the UN estimate that world population will double by the early part of the next century—from the 1974, 389 crores to the 2010 AD total of 770 crores. The 1974 population shows a 7.2 per cent increase over 1973. More than half the world's population at 220.6 crores lives in Asia, and the highest rate of population growth (2-3 per cent) is in Africa.

Asian Region : India's offer to ESCAP at its last year session in New Delhi (see Vol. V, p. 280) to make available facilities for the establishment of a regional centre for technology transfer and the details of the Rs. one crore offer from India are being reviewed at an inter-governmental meeting. The Centre will also benefit India's fast growing programme of technical and economic co-operation with the developing countries. The Asian Pepper Community has decided to locate its headquarters in Indonesia, with an Indian as its first director. The Community, with India, Indonesia and Malaysia, as its first member covers 70 per cent of world pepper production and 80 per cent of exports. The Community has approved a work plan on production and marketing to secure improved prices for the government. Finally the Asian Telecommunications Highway running from Iran to Indonesia is likely to be completed by 1977-78. It will help the non-aligned pool of 30 news agencies and strengthen the functioning of the Asian Pacific Telecommunity.

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II. Agricultural Development

Paddy Production :

The government estimates that the 1975-76 paddy production was 61 lakh tonnes, millets 17 lakh tonnes, and pulses of 2.6 lakh tonnes. As noted earlier, by mid March the government had procured 4.8 lakh tonnes of rice, paddy prices reached very low levels to the point where the government was urging the Planning Commission to take steps to stabilise the prices of paddy and rice to safeguard the interests of farmers. For 1976-77 the target is 63 lakh tonnes of rice, 18 lakh tonnes of millet and 2.9 lakh tonnes of pulses. For this, the government proposes to bring over 134 lakh acres under HYV and IADP, of which 55 lakh acres would be under HYV paddy, 10.5 lakh acres under high yielding millets, 54 lakh acres under IADP and 15 lakh acres under IAAP. Seeds are to be supplied to the extent of 21,000 tonnes. There is to be a massive package programme to increase dry land production wherein contiguous 10,000 acre blocks, atleast one in each district will be taken up for the first time under IAAP. The actual additional expenditure is marginal: What is new is the package of dry farming practices tried successfully at Kudumiamalai, Koilpatti and Pudukottai, which will be widely practised. There will be advance sowing in the first season followed by a second crop, drought tolerant high yielding varieties of millets, a two crop sequence of pulse—cotton or pulse millet or pulse sun flower along with new crops such as Senna Vinca. Also HYV cholam like IS 3541, Koilpatti Tall and CSH-5 will be used and above all the special training for farmers will ensure the management input. Alongside a massive aid programme envisaging distribution of Rs. 130 crores as crop loans to farmers in 1976-77 will support this programme. Rs. 120 crores will be in the form of short term loans and Rs. 10 crores long term loans.

Seeds, Water, Pest Control and FSS:

One of the reasons for the good paddy crop in the State and Country was the seed distribution programme undertaken by the minikit scheme under which 2 kgs of HYV seeds were given to some 300-500 farmers in each district, who acted as demonstrator agents. For the 1976 kharif season, the seed multiplication programme was taken up in the State a year earlier—during kharif 1975, so that the minikit programme may extend to a larger number of farmers in the State in time and with sufficient variety. As one of the 8 corporations, under the World Bank aided national seed programme, the government is planning to set up a State Seed Corporation, under which seeds will be multiplied in private holdings of 20,000 acres in North and South Arcot, Coimbatore and Madurai districts. After processing and certification at the 3 processing units of the Corporation, the seeds will be made available to paddy, millets, cotton and groundnut growing farmers. The State needs 9,000 tonnes of paddy seeds and 11,000 tonnes of millets and cotton seeds, and the Corporation will supplement the seeds produced by the 52 State seed farms as well as provide an assured market for seed farmers. On the water supply side, the government will

be taking up Rs. 20 crores of new medium irrigation works and Rs. 1.5 crores of SMIP, the latter particularly to complete ongoing projects in drought prone areas. The additional irrigation potential to be created this year will be 4,740 acres and stabilised irrigation achieved in 11,290 acres. As a result of completing 3 schemes at the end of last year, water has been impounded to benefit 4,460 acres of new ayacut and 20,200 acres of stabilisation. Besides modernising the existing irrigation system for better water use and expanded facilities, of the 18 major and medium irrigation schemes under construction in the State, five will be completed this year and 9 next year—which is a good execution record. Action is being taken in the State and Country on plant protection and pest control measures. Primary school teachers in all 365 panchayat unions in the State are being trained in the fundamentals of identifying crop pests and disease in their areas. In Tiruchendur, Pudukottai and Trivallur blocks the training of the primary school teachers in the crop pest warning system was completed in March and April so that they can give farmers information on pest incidence in their areas. Attention has been concentrated through exhibitions of live specimens of the pests and pathagenion different bio stages and symptoms on major crops—with particular reference to paddy pests and diseases—jassids, stem borer, leaf roller, brown plant hopper, hispa, blast and leaf spot, and groundnut pests—red hairy caterpillar, surul poochi and tikka leaf spot. This is also part of a Rs. 8.4 lakh ICAR project to train young boys and girls to look after the health of the soil as rural soil health care workers, wherein under the guidance of the agricultural universities 100 young persons living in villages and engaged in farms are being trained annually in all aspects of soil health, including soil testing, water quality analysis, preservation of organic matter, use and maintenance of gobar gas plants, understanding soil borne diseases, biological nitrogen fixation and use of bacterial culture and algae in nitrogen fixation. Alongside, Farmers Service Societies are being formed in the State and other Southern States, which, on the basis of financing from co-operative or commercial banks or the State, will provide short term credit to the small and marginal farmers, now rather urgent because of the drying up of sources of finance consequent on the ordinance on rural debt moratorium, referred to under the State section.

Research Results :

To enrich the protein content of rice, CRRI has successfully cross bred CRHP-8 and Padma and the resultant CRHP-1 yields more than our native Padma, yielding 494 kg. of protein per hectare with 10.2 per cent of the nutrient in the grain and can be grown as the samba and thaladi crop and rabi crop. Similar cross bred No. 13, result of crossing CRHP-8 and Rohini, can be used for the kharif crop. Another paddy variety released is PR 106 which is not only a better yielder than IR-8 and Jaya but has a finer grain. It is now used extensively in the Punjab and should be popularised here. An improvement in weeding and weed control has been made known by CCRI though the use of butachlor granules which suppresses weed emergence when applied in a field a week after the transplanting is completed. IRRI released in early March four dwarf varieties of barley (bajra) with high resistance downy mildew diseases. 500 minikits containing these varieties have been distributed to farmers in this State in moderate rain fall areas. The

varieties BJ-104 and BK 559-230 have been tried out successfully in Kudumia-*malai and have been released* as KM-1 and KM-2 For high rainfall areas PHB-10 and PHB-14 are being released and the production of these hybrid seeds *at 6,000 tonnes will be a profitable* farm operation with an assured market. IRRI also released at their March mela two triple dwarf varieties of wheat, HD-2160 and GD-2122, which as early high yielders will in time replace Moti, Sona, Kalyan and Sonalika. The Tindivanam station has on the basis of its research experiments arrived at the optimum fertiliser schedule for the dry land groundnut crop at 4 : 4 : 18 kg. of NPK per acre, along with various fungicide treatment of the common pests afflicting the crop in this State. Alongside, research on biological control of crop pests involving preserving and multiplying useful and beneficial insects in fields and orchards needs to be developed in our stations to the same extent as research on chemical control of pests. On vegetables research, the Tamil Nadu Agricultural University as part of the All India Co-ordinated Vegetable Improvement Project is researching on 23 tomato varieties. Tentative results show that the small variety, S-12, has the highest yield of 51,674 kg. per hectare, followed by CO-1 (48,881 kg. per hectare), both being early producers in 60 days. Among the larger varieties, Pusy Ruby stands first with 43,237 kg. per hectare maturing in 100 days. The University research on flowers, particularly roses, have yielded similar results in disease resistant varieties. Haryana and Punjab Agricultural Universities have also worked on dry land vegetable culture, using a technique of pitcher farming, where plots prepared in such a way that they slope towards a central pit which can receive and retain moisture which vegetable cultivation needs. In tomatoes also the Punjab University has produced an early maturing high yielding (320 quintals per acre) variety on all fours with that produced at Coimbatore. The Sugarcane Experimental Station at Cuddalore has after prolonged experiments, produced an early high yielding and greater sucrose content variety—CO-67-1. It produces 8 tonnes per acre above the usual CO-658, with increased sugar content. It is also resistant to red rot disease, but must be safeguarded against arrow and medium lodging tendency. The South Arcot Sugar Co-operative has taken up the growth of this variety. Research on mango diseases is underway to safeguard the mango crop this year in the State. The use of the chemical carborge is recommended and is in use to safeguard the crop. A new area of research — plant tissue culture in agriculture — particularly in commercial crops and fruit and vegetable plants—is opening up in the country, following its successful application in mango, cashew, cucumber and papayya yields, through a rapid increase of the female species. A conference in March in Bombay chalked out a research plan on this new area and divided up the efforts between the research centre and laboratories of the country. The results will also be of immediate benefit to our forestry programme particularly in the growth of teak forests.

Dairy and Fish Farming :

The Second Dairy of *the Tamil Nadu* Dairy Development Corporation was inaugurated by the President of India at Ambattur in April. Established at a cost of Rs. 255 lakhs *with the help of the* World Food Programme as part of the Operation Flood Programme, it will handle 2 lakh litres of milk per day, to be vended

through 50 vending machines, which are being installed in the city. The co-operative which links rurally produced milk with urban consuming centres is part of similar establishments in Coimbatore, Madurai, Ooty, Vellore and Erode. In this connection, the animal husbandry industry is developing as a self-reliant occupation in the rural areas. The Pudukottai farm has shown that the cross bred Jersindhi cow gives an average yield of 7.2 kg. of milk per day. The farm which has a cattle population of 1,079 over an area of 1,600 acres should pursue further modern breeding practices, including artificial insemination and spread its influence and practices in all areas of animal husbandry in which it is involved—sheep farming, piggery, poultry farming in addition to quality cattle breeding—and extend them to the surrounding rural areas which it has not done so far. Thanjavur district is being readied to start its first Fish Farming Development Agency to increase fish production from inland water sources and create a new class of fish farmers. The Rs. 4.5 lakh scheme will use the Cauvery system to train 100 inland fishermen and allot them 1-2 hectares of water pieces on a hire basis, with loans and grants to develop intensive fish culture. The scheme, once it gets going, will then be extended to other districts.

Tea :

South India tea production in 1975 increased to 106.4 million kg. compared to 100.1 million kg. in 1974—an increase of 6.3 million kg., while North Indian production declined from 378.6 million kg. in 1974 to 371.5 million kg. As a result, the 1975 production was marginally lower at 477.9 million kg. compared to 478.7 million kg. in 1974. In 1975 Sri Lanka's output was up by 9.7 million kg. at 213. 7 million kg., while Kenya and Malaysia had record crops. On the export side, India did well in 1975, tea exports earning Rs. 240 crores compared to Rs. 190 crores in 1974. In quantum terms, the increase was only from 205 million kg. to 212 million kg. so that it was the higher price realisation—(Rs. 11 per kg. vrs 1974's Rs. 9 per kg.) which accounts for the improved earnings. The April 20-30 meeting called by FAO of the major tea producers and exporters to form the International Tea Promotion Association has before it a draft prepared by the FAO/UNCTAD/GATT/and Common Wealth Secretariat based on (a) tea's good future as other beverages are becoming dearer, (b) each country contributing to the costs on a pro rata basis for promotional campaigns and (c) the body being located in a tea consuming country. Offers on the location have been received from London, Hamburg and Rotterdam. On the domestic front, Lok Sabha is to adopt the Tea Act Amendment Bill, under which 24 sick tea estates may be taken over.

Coffee :

The 1975-76 coffee crop as noted in the last issue is estimated at 90,000 tonnes, of which 50,000 would be Arabica and the rest Robusta. Coffee export earnings amounted to Rs. 62 crores, involving one million bags, giving India the 8th place among 42 coffee exporters and 2 per cent of world coffee exports. In March, the census of coffee estates was completed so that there is now a firm base for planning and long term production and marketing policies. Of the 80,587 estates, only 50 per cent had been registered, Karnataka accounts for 24,69,24,854 plants or 61 per cent, Kerala, 6,26,13,308 plants or 16.8 per cent and Tamil Nadu 6,07,10,379

plants or 16.3 per cent. 81.2 per cent of the estates are less than 5 acres, covering 4,23,870 acres, mostly growing Arabica. The Chairman of the Coffee Board states that during the next 10 years 2.5 lakh acres can be brought under coffee production, involving Assam, (one lakh acres), Orissa (50,000 acres), Andhra Pradesh (50,000 acres), and with improved productivity, Indian coffee production would go up from the current 90.000 tonnes to 1.40 lakh tonnes. The six fold increase in export duty on coffee reported in the last issue (p. 215) has led to slow down in exports. There is need for some adjustment of the duty to the various grades of coffee and its application retroactively, in view of commitments to importing countries like the USSR. The government has this under review. Meanwhile the Coffee Board is doing everything to ensure that the export momentum is not slowed.

Rubber :

The Rubber Board reports that for the period April-December 1975, natural rubber production was 1,06,998 tonnes an increase of 5.8 per cent over the similar previous period. The fall in the use of natural rubber continued, the consumption being 3.5 per cent less compared to the previous 9 months. Stocks increased to 54,018 tonnes in December 1975 and prices moved downward. World rubber prices moved up. For 1975-76 the Board estimates a production of 1,40,000 tonnes.

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III. Industrial Development

Industrial Profile :

in March, the government set up action groups to study the various aspects of speeding the State's industrialisation process. The groups are concerned with maximising capacity use, speedy capacity development, rationalising import, export and industrial licensing procedures, strengthening the government facilities for technical information, data bank build up etc. Special groups are at work on export oriented activities in handloom and leather as will be noted later. Questions of supply of raw materials and scarce inputs to artisans and improved power availability to the medium and small industries are also being examined. As a result, some filling out of the State's industrial profile should follow.

Salem Steel :

The budget provision of Rs. 3 crores for the Salem Steel Plant noted in the last issue p. 215 with all the attendant frustrations and limitations continues. Towards the end of April there was information that the Union government is seriously examining increasing the allotment to Rs. 16 crores which commit it to provide Rs. 48 crores next year and a total of Rs. 116 crores for machinery and other equipment that will then be ordered now and delivered over the next few years.

There may be a mid way decision between Rs. 3 crores and Rs. 16 crores but the time has come to make a decision, if the price of the technology to be imported from US or Japan and Germany is not to increase again to unmanageable figures. Everything else is ready, the approved project report, the site and the drawings. Now the question is whether the country wants the stainless steel plant.

Seamless Tube and BHEL :

The Rs 58 crores project to manufacture 40,000 tonnes per annum of seamless steel tubes is to be inaugurated in June and be ready for commissioning in 42 months. Its location at BHEL, Tiruchirapalli is good. BHEL estimates a turnover of Rs. 415-419 crores for 1975-76, and for 1976-77 has set itself a target of Rs. 405 crores. About 35,000 tonnes of boiler parts were supplied to Tuticorin thermal and SPIC in March/April. BHEL, Bhopal has developed a new equipment—the minimum oil in unit brakes, to be used for capacitor bank switching and for which there need be no more imports. Its US collaborator feels that BHEL has the capability for fabricating 500 MW and will become self-reliant in 3 years. This is good news.

Neyveli Lignite and Kalpakkam :

NLC reports that in 1975-76 improved performance in all its 3 units (plus the saving on interest due to conversion of its Rs. 40 crores loans into equity see Vol. V, p. 218) resulted in a sharp reduction of its losses from the average of Rs. 12 crores per annum to Rs. 3 crores. Its power generation increased from 1,788 million units in 1974-75 to 2,000 million units in 1975-76 and will be further increased to 2,200 units in 1976-77. The fertiliser unit increased its production from 38,200 tonnes to 60,000 tonnes in 1975-76 and plans to further expand it to 80,000 tonnes in 1976-77. The Union minister in the Lok Sabha reported at the end of April that two schemes—one for Rs. 120 crores and the other for Rs. 87 crores were drawn up to increase NLC's annual lignite production to 6.5 million tonnes, and that this was being taken up for execution. The 1975-76 production was 3 million tonnes and for the current year it would be 3.4 million tonnes and when the worn out excavators are replaced by 1978-79 with the Rs. 87 crores equipment which will have a capacity of 1,250 litres instead of the present 750 litres and even their working at 50 per cent production efficiency, output will near double. Oil prospecting at Thirumangalam near Mayuram indicates the possibility of lignite sequence from Bahur in Pondicherry to Mayuram along the coast. Further steel making grade limestone sequences in the Ariyalur area indicate reserves of 28 million tonnes. The lignite reserves at Neyveli are now estimated by GSI at 3,300 million tonnes. Both the Union and State governments reiterate that the first unit at Kalpakkam will be commissioned in 1977-78, and its power generation will begin probably the following year—which places 1977-78 as a critical year for the State's power needs and availability.

Madras Surgicals and ICF :

For 1975-76, the losses in Madras Surgicals increased from Rs. 110 lakhs the previous year to Rs. 130 lakhs, and though IDPL absorbed this loss and reports an increased net profit of Rs. 2.73 crores for the year against that of Rs. 2.49 crores for the previous year, the case for restructuring the unit and transferring it to a public sector engineering unit is now quite clear

as reported in Vol. VI, pp. 24 and 26-27 and should be speedily acted upon by the Union government. ICF reports a good production performance for 1975-76, having fabricated 472 coaches by the end of February against the year's target of 477, whose shells were completed by February end. Its work efficiency and management system are geared to increasing product performances.

Electronics, Test Centre and Small Industries :

An electronics estate, next to BHEL, Tiruchy is now nearing completion and 8 units will be allotted to entrepreneurs during May and June. The Industries Department is providing the 8 units with the needed infrastructure, and for the additional applicants developed plots will be made available. The Union government has set up a Southern Regional Test House in Madras, temporarily located in the Engineering College, Guindy to provide testing and evaluation services for industrial products in the Southern region. The permanent headquarters for the Centre is coming up at the CIT campus, Guindy, where equipment costing Rs. 40 lakhs for testing machanical, electrical, chemical, electronic and engineering items will be located. The Centre will render specialised advice to government departments on plan projects and on technical questions: it will have a standing committee on classification to identify common purchase items and evolve common standards for the government purchased products. The State Directorate of Industries, SISI and the Union government have identified six groups of small scale industries—casting and forging, storage batteries, automobile components and accessories, leather and leather goods, domestic electrical appliances and scientific equipment—for modernisation, involving an indepth study of their working, suggestions for change in working and provision of equipment. They would also get priority in finance and be helped for a period of 4-5 years. 20 foundry units in Coimbatore and 60 automobile ancillaries in Ambattur and Guindy and leather units in North Arcot with Rs. 5.20 lakh machinery are being helped in the first round. On the small scale industries front, a ready made garments production unit was launched in Madras in mid March to meet the growing export market in this area. FCI's first solvent extract on plant at Sembarnarkoil In Thanjavur district started from early April producing edible oil from rice bran. The plant has stabilised the free fatty acid content of the oil at 3.5 per cent, and the oil is deodorised and decoloured before being marketed. On an average, one sixth of rice bran is converted into edible oil daily—that is 3 tonnes of industrial oil out of 15 tonnes of rice bran per day. On this basis, FCI plans to set up modern rice mills and solvent extraction plants in all major rice producing areas in the Country. A Rs. 13 lakh modern pork processing plant on the lines of the Regional Bacon Factory at Gannavaram is being set up in the State by the Department of Animal Husbandry. The plant will be served by the 300 piggeries set up under SFDA and MFAL for which this would be a good market. 400 small scale starch and sago industries have reached a point of standstill as a result of the 10 per cent ad valorem duty imposed by the Union Budget (see last issue p 195). There are financial and technical storage problems that the small starch factories and the related sago factories face, and the 50,000 acres of tapioca cultivated in the district. The duty is under examination of the government for these reasons

A Rs. 5 lakh silk reeling factory is being started in Coimbatore by the Mulberry Growers Co-operative Society. The factory will draw upon the local cocoon production which averages 700 kg. per hectare per annum against the all India average of 250 kg. per hectare. As a consequence, there should be further expansion of sericulture in the region and the State. There is a case for a directorate or special office for sericulture and silk production in the State to help in the development of this important cottage industry. The Rs. one crore Tamil Nadu Ceramics Limited operating over the 72 acre complex in Vridichalam reports a production of Rs. 34.72 lakhs of ceramics, Rs. 28.42 lakhs of stone ware pipe and Rs. 3-7 lakhs of cement pottery for 1975-76. Its artistic crockery, stone ware pipes and other ceramic items have a wide and growing market in the Country and Europe and North America. A modern continuous type of tunnel kiln, costing Rs. 2.7 crores is now being installed for the common use of all the units in the estate.

Textiles and Sugar:

Textile and sugar mills in the State report a difficult situation in March and April. For the textile mills, the 15 to 20 per cent rise in cotton prices caused by Maharashtra State Co-operative Marketing Federation have pushed up costs. They report as a consequence that against a normal stock of 6 lakh bales of cotton, they held in April only 1.5 lakh bales. Their claim that the increased price of cotton makes it impossible for them to break even and cause the weaker units to close down should be examined by the Directorate of Textiles with a view to taking corrective action. For sugar mills, the situation is near disastrous. Due to the shortage of cane which has resulted in a steep fall in cane acreage plus last year's drought and diversion of cane to jaggery, the 17 sugar mills in the State report the following performance: quantity of cane crushed 21 lakh tonnes against the previous year's 48.25 lakh tonnes: duration of crushing 89 days against 225 and 163 days for the previous 2 years: with the net result that the sugar output for the year which was estimated at a low 2.13 lakh tonnes is now scaled down to 1.91 lakh tonnes, compared to the output of 4.08 lakh tonnes for 1974-75. This is truly a disastrous situation calling for the Union and State governments action: (a) fixing a remunerative price for sugar cane farmers and (b) establishing an equitable levy and open market price for sugar **vis a vis** the prices fixed for UP and Bihar mills.

Handloom:

Following the decision announced on March 11 by the Union government to earmark controlled varieties of dhoties and saries for the handloom sector, the State government in early April announced a detailed plan for these items to be fabricated by 25,000 looms in the State. Out of the 5.5 lakh handlooms in the State, about one lakh are already producing dhoties and coloured saries which are more popular in the State than the mill-made varieties. The handloom sector is producing dhoties and saries in the Country upto 35s and the 40s X 60s materials will also be readily sold as the people are used to it. In the controlled cloth variety, it is proposed that rather than pushing what is called Janatha cloth, which would not be in demand, controlled cloth of the handloom variety can immediately be produced by 25,000 looms for producing 27 million square metres which is about an eighth of the 200 million

metres of what the handloom sector can be expected to produce. In this connection, there is an anomaly introduced by the Union Budget in levying the same excise (0.5 per cent), on both power and handloom fabrics when processed by the non-power process. This places handlooms at a disadvantage, which can be removed by raising the rate of powerloom fabrics. The State government has also placed before the Union government a plan to increase the co-operative coverage of handloom weavers from the present 30 to 60 per cent, involving 27,000 weavers at a cost of Rs. 4.05 crores. This plan should be approved and put into operation. The government has set up an export oriented handloom project at Karur covering 1,000 handlooms for the production of furnishings and bed spreads for exports at around Rs. 40 lakhs. One question which the government should regulate is the sharing of export profits between exporters and the weavers, which is at present left to market forces. It is also planned to set up 2 intensive handloom projects at Erode and Kancheepuram covering 5,000 handlooms at a cost of Rs. 18.5 crores. Co-optex reports a sales income of Rs. 18 crores for 1975-76 and for 1976-77 a target of Rs. 25 crores has been set. The Co-optex with the help of the banks will also be helping weavers to come into the co-operative fold during the year as a way of dealing with the pressure from master weavers.

Leather :

Leather exports in 1975-76 are estimated by the government at Rs. 185 crores, out of which finished leather contributed Rs. 40 crores. For 1976-77, the export target is set at Rs. 225 crores including finished leather exports of Rs. 60 crores. This State which accounts for 40 per cent of leather exports, with North Arcot alone being responsible for most of that, has asked the Union government to slow down the cut in the export of semi-finished leather and limit it to a further 15 per cent for the current year in order to give the tanneries and tanning workers time to adjust themselves to this reduction. The Madras Leather Export Promotion Council has further urged that the cut should be heavier on the bigger processors and not be an equal flat rate on all large and small tanners. In this connection in Vaniambadi a common facility centre is being developed to help small tanners switchover from manufacture of semi-finished leather to finished leather. This Rs. 40 lakh centre will be a tanners co-operative, with the government contributing to the share capital. Similar centres are being planned at Ambur and Ranipet, to help small tanners in switching over to manufactures and processed leather. Also at Ambur, an export oriented foot wear unit, South East Asia Foot-wear Limited is being established, which with Italian collaboration will make the most sophisticated foot-wear for the European market. The Rs. 150 lakhs project is being financed by term loans from ICICI, TIIC, SIPCOT, Punjab and Sind Bank and the Union government. Its imported machines will be installed in August and it will go on stream by December and produce half a million shoes per annum, earning Rs. 5 crores in foreign exchange.

Private Sector Reports :

The annual report of Parry's Confectionary for the year ending December 1975 shows a higher loss at Rs. 52.13 lakhs compared to the previous year (Rs. 5.98 lakhs)—traced to a 53 per cent decline in sales from Rs. 4.85 crores to Rs. 2.27 crores, and 60 per cent decline in volume —in turn due to recessionary trends in the confectionary industry and the rise in costs.

The efforts of the company to reduce its operation, rationalise costs, reduce its work force resulted in a 4 month strike *which further restricted* production and sales. The company reports better prospects for 1976, due mainly to the general trends to counter recession. IAEC—Madras Unit reports a good year for 1975 with its newly opened plant at SIPCOT's Ranipet complex where its production of a fully automatic packaged flue tubed oil fired boilers designed entirely by indigenous knowhow has gone on stream. For the coming year the unit will be producing pressure vessels, heat exchanges and structurals.

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IV. Education, Science and Health

Educational Reform :

NCERT is completing its work on the revised text books for the Ninth and Tenth standards of the 10 year school—text-books in Natural Sciences and Social Sciences. The States can use these books, translating and in the case of history and geography texts adapting them to State conditions. The books are based on the modern *learning process and call* for self-study by students. The use of the best expertise in the country to develop the curricula and text-books should be of assistance to all States in raising the level of high-school education. The Council has also after prolonged consultation produced a draft outline on the curriculum for the 2 stage (Higher secondary and its vocationalisation) which should be the subject of discussion and consultation between the NCERT and the States, *particularly those* like *Tamil Nadu, which are preparing* to *launch* the 10+2 system in 1978. In March, an all India conference of district education officers in New Delhi drew up a plan for education of school drop-outs, particularly those who left the school because they had to work, and discussed the implication of the 10 year work experience based curriculum and means of relating the school to environment. In the State, the government has decided to permit, the opening of more English medium sections in *recognised* schools to meet the growing demand for English Medium instruction, and to prevent the mushrooming of unrecognised private English medium schools which are operating as commercial enterprises. In this direction, the government had since 1974-75 restricted the admission of students from unrecognised schools into the Sixth standard, instead of the previous eighth standard, thus limiting the formers' expansion. The decision to open up English language *sections should further* limit the proliferation of unrecognised commercially run institutions. At bottom is the problem of the language of learning, on which Tamil Nadu parents and society have yet to make up their minds, which in turn depends on the relation of the language learnt to employment prospects in the State and the Country. Three further developments in school education in the State occurred in March and April. In the 37 Municipal

schools in Coimbatore, an experiment is being introduced under which the elementary school teachers will be placed in charge of the same set of children from standard one to five—that is, the higher grade teachers in standard one will move with their pupils upto standard three after which they will return to standard one to take charge of a new set, and similarly the secondary grade teachers will move with their children from standard four to standard five and then return to standard four. This is aimed at improving the teacher-pupil relationship and the quality of learning. Second, in 50 primary and upper primary schools in St. Thomas Mount Panchayat Union, the school teachers are being used as agents of community development, including health work, under which the schools will make a survey of the local village, identify the weaker sections, organise health and sanitation education programmes, help housewives build smokeless ovens and develop kitchen gardens etc. Teachers are being trained in treatment of simple diseases and first aid. This is in part implementation of the 20 point programme. Third the government has exempted deaf children from one of the 2 languages and allows them to appear for just one language in their SSLC examination. In Madras, the Corporation in its programme to implement the school environment completed construction of 124 class rooms at a cost of Rs. 32 lakhs, which replaces 50 per cent of the thatched sheds which the schools had so far used. At the University level, the State government reissued the Private college ordinance in March in order to extend its life beyond March 13 and in April the President regularised it by enacting the Tamil Nadu Private Colleges (Amendment) Act, which will be analysed in the next issue of the Bulletin. UGC has called attention to the unplanned proliferation of Universities and colleges. In 1973-74, enrolment increased by 65,440, but 125 colleges were set up in that year, giving an average of 500 students per college. The UGC norm is a minimum of 800 students and an optimum of 1,500 per college. In March it also issued instructions for the new UGC scales to be applied to IITs, IIMs, IIS, Indian School of Mines, School of Planning and Architecture, NCERT, Jami Millia, TISS, Regional Engineering Colleges, and Regional Colleges of Education. Under the double programme of supply of text-books, and essential commodities at concessional rates, 2.3 lakh students have been beneficiaries, with a 10-20 per cent reduction in the price text-books and a reduction of Rs. 10-15 per student mess bills in 2,775 hostels. To promote academic excellence, and scholarship, the UGC and the Union government are introducing a scheme of "eminent" professors in Universities to be followed by a restructured scheme of 8 national professors who will be appointed at 60 (and not 65 as in the past) and hold the distinction for a period of 5 years. The Orissa University Act passed in April provides for student representation in the Senate, new machinery for selection of the Vice-Chancellor composed of UGC, the Chancellor, the Syndicate and gives power to the government to modify the University status "suo moto". The UGC has also proposed reservation in teaching posts to scheduled castes and tribes personnel. On the reform side, the Universities are beginning to work on the enriched curriculla and syllabi for the 3 year first degree course as recommended by the All India Vice-Chancellors' Conference (see Vol V pp 607-608). The Prime Minister has also raised the question of the wisdom of separate educational institutions and separate syllabi for

women at the University level. She has proposed a "non-sexist" type of education and has expressed herself against different types of education for boys and girls. The whole raison d'etre of womens' colleges and womens' Universities is queried in this approach. There is need for a carefully planned study of the objectives, forms and content of womens education, preferably by knowledgeable women.

TV and Adult Education :

The SITE programme in its present form covering 2,400 villages in AP, Bihar, Karnataka, MP, Orissa and Rajasthan will end in July when ATS-6 will be returned to the US. The government is setting up 6 television transmitters to cover 960 SITE villages plus 8,000 other villages. These 8,000 villages will have to be provided with TV sets at a total cost of Rs. 2 crores. There are naturally somewhat conflicting evaluations of the technical operation of SITE. The government hardware is of the view that the design of hardware and earth stations was good, 90 per cent of the sets were in operation, audience response was positive, school attendance increased and 24,000 teachers trained in SITE use. In addition over 100 anthropologists, sociologists, psychologists, educators, political scientists and media researchers have been investigating the socio-economic changes effected by the programme in the villages. Other evaluations include the statement that 40 per cent of the sets were not working at any one time, and that after inital novelty wore off, children rather than adults watched the programmes. The truth probably lies somewhere in between, with the conduct of the programme itself being the main gain. The six transmitters are being set up at Jaipur, Hyderabad, Raipur, Sonialpur, Muzzaffarpur and Gulbarga. It is planned to cover the entire country by 1981 when the Indian Satellite is launched and a hybrid system used—of terrestrial TV for States like Tamil Nadu and Kerala which are heavily electrified, while others will be served by the satellite. TV was separated from AIR and became an independent service—Door Darshan, Television India—from April 1 and its Director General is Mr. P. V. Krishnamoorthy, who has all the training and experience to make this media an effective educational one. The Electronics Commission reports that 20 TV manufacturers supplying 70 per cent of the market have cut TV sets prices, as a result of the budget relief, from Rs. 420 for a set costing Rs. 1,800, to Rs. 1,000 for that costing Rs. 3,400. Education Technology cells to promote use of mass media and instructional technology particularly for non-formal and adult education are being set up in 15 States, including Tamil Nadu. They will be aided by the Centre for Educational Technology at NCERT in educational innovations, teacher training and evaluation of materials and programmes. It will develop curricula and basic scripts for TV, radio and films and produce multi-purpose kits and models.

Technical Education :

In April, an international conference on Training of Engineers and Technicians organised by UNESCO was held in Delhi at which the curricula, the relation to man power needs and industry in each country and the development of international co-operation in building up to date engineering institutes were reviewed and recommendations made. The Post and Telegraph Department will be training 20,000 telecommunication personnel each year in the country's Telecommunication

Training Centres and to push and update this programme, an advanced Level Telecommunication Training Centre has been set up to train the trainees. At the State level, a conference of 100 principals, Directors of Technical Education, and faculty members met in Coimbatore and decided on the changes needed in the pattern, organisation and content of technical education in light of the rapid technological advances, changing values and aspirations of our society, and the developments in the learning process. In this, closer links as between the Universities, IITs and the colleges on the one hand and industries on the other are to be forged. IIT, Madras has launched an integrated village development programme at Narayanapuram, where an energy complex combining biogas, solar energy and wind power is being set up, together with a dairy farm, and improved sanitation and small industries fed by the system. The State government has decided to grant autonomy to 3 polytechnics—PSG polytechnic, the Rajapalayam Poletechnic, and Thyagaraja Polytechnic — the first in all departments, and the 2 latter in the textile department. They are to innovate their curricula and conduct their own examinations. The Department of Technical Education has also developed a programme of text-books and question banks for the polytechnics. In April following there was a 2 day conference of Principals, Deans and Professors of the country's medical colleges when the 3 tier medical delivery system was discussed and the crucial role of medical colleges in the system agreed upon and the realignment of the system of medical education along lines of the Shrivatsava Committee report (see Vol V pp 5 and 292 and Vol VI p 100) and the subsequent plan of action to make medical education conform to our rural needs and colleges to be operational headquarters to deal with the simple package of community medicines, population control and nutritional inputs in their preventive, promotive and rehabilitative projects. Now it is for each University to follow up this agreed plan.

Science :

The National Committee on Environmental Planning of DST is in the process of creating biological reserves in the country to save rare plants and animals from pollution. In this connection, a Madras Seminar on Energy Management and the National Committee have suggested that an energy surcharge should be levied on people and institutions indulging in non-optimal use of energy and conspicuous consumption. and the levy of a cess on industries using water, for financing State Boards on environmental planning and pollution prevention. The Tata Institute of Fundamental Research reports some novel properties of cosmic rays—energetic particles coming from extra-territorial space as a result of its cosmic ray experiments. Alongside simultaneously, scientists from the Himalayan Radio Propagantion Unit at Dehra Dun have sent radio signals via meteors to the Space Research Laboratory of Andhra University. Also BHEL announced that it will begin manufacturing equipment to back up the country's Solar Energy Research Programme as a means of promoting use of non-traditional energy sources. BARC reports the indigenous development of Iron Implantation Technology which will revolutionalise existing industrial processes as seen in its use in the toughening of stainless steel, prevention of corrosion in silicon steel, developing solar cells for generating electricity from sun light etc. To ensure

speedy commercialisation of the results of research undertaken in our national laboratories, the government has exempted manufacture of items based on indigenous technology from the licensing provision of the industries Act. ECIL reports completing the functional testing of the Rs. one crore dual computer system to be used in Kalpakkam's fast breeder test reactor and the introduction of the Micro-48 computer which will meet the country's computer needs. At the State level, the government announced the opening of 4 more food testing laboratories at Madurai, Thanjavur and Palayamkottai, in addition to those at Madras and Coimbatore as part of its anti-adulteration programme. SITRA announced in March the development of a machine, SITRA nep counter of identifying and estimating neps and foreign matter in Yarn—a device which will meet one of the problems high lighted in the World Bank report referred to earlier. The Kudumia-malai Station announced a cheap Rs. 200 implement for inter-cultivation operations like breeding, stirring up, and earthing up of soils for dry land cultivation. Two private sector industries, Seshasayee paper and South India Viscose, set an example of allocating funds amounting to Rs. 11 lakhs and Rs. 75,000 respectively to the Tamil Nadu Agricultural University for forestry research and developing new species of plants for the manufacture of pulp for use in viscose production. This is the first case in the State of 2 industries using the 133 per cent tax exemption on donations to research offered by the Income Tax Act; it is hoped that other industries will follow this example. ICAR's Central Institute for Cotton Research established at Nagpur in April should be financed in a similar way by the textile industry. In April, the Tamil Nadu Academy of Sciences was formed in order to develop further science and technology in the State, and advise the government on its programmes calling for science inputs. ECE studies report that the commercial production of synthetic crude oil from coal will not be viable for another 10 years as its technology has to be simplified and made pollution free. It also concludes that many problems must be overcome before MHD generation becomes a viable alternative to today's power stations but its technical advantages are many.

Health :

The major event in the Health field is the National Population Policy announced by the Union government (Minister Karan Singh) on April 15 at the Joint meeting of the Central Council of Health and Family Planning. This is a first clear official statement of policy on Family Planning and Health, which fills a void which has been referred to in the Bulletin. Its main components are : (a) the minimum age of marriage is raised to 18 for girls and 21 for boys, with registration of marriage being considered as a compulsory obligation and infringements being cognisable by a sub-divisional magistrate and above : (b) representation for States in the Lok Sabha and Plan assistance to States (Under the Gadgil formula—See Vol. III pp 156-157) are stabilised at the level of the population recorded in the 1971 census for the next 25 years—that is till 2000 AD: (c) the level of terminal education is to be raised and priority given to child nutrition : (d) population values in the education system are to be introduced : (e) the monetary compensation for sterilisation from May 1976 is raised to Rs. 150 per head if performed after 2 children or less, Rs. 100 per head if with 3 living children, and Rs. 70 if with 4 or more living children : (f) group incentives for the medical profession, Zilla and Panchayat samitis, teachers, co-operatives

and trade unions are offered: (g) tax exemption for *donations for family* planning activities of government or voluntary *agencies: (h) service and* conduct rules of Union government employees are to *help in the adoption of* the small family norm: and (i) while *there is to be no central legislation on* compulsory sterilisation, States have been *left free to adopt compulsory sterilisation* Acts—which Puniab, Haryana, Maha-*rashtra and Andhra Pradesh have* announced their intention of doing, and *have drafted bills to this effect. The Plan* also provides for health care in rural areas *using community level workers drawn* from teachers, post-masters, gram sevaks *and village midwives in* 70 *districts* before August 15. The three tier system of Health Delivery would use community level workers, multi-purpose workers and health assistants and doctors to provide health service to the community. The *overall aim* is to reduce the birth rate from 35 per thousand in the Fifth Plan to 25 *per thousand* in the Sixth Plan, and allowing for a steady decline in death rate *to reduce* population growth from the current 2 per cent to 1.4 per cent by 1984. At the State level, the government launched in March a programme for the *early detection* of common diseases—leprosy, blindness, and other nutritional *disease among* 6-11 age school children. For this year Rs. 56 crores is allotted to medical care and this preventive programme will be expanded with a small part of these resources. The government also reports that in 1975-76, 2.86 lakh persons were sterilised against the target of 2.11 lakhs and similar results were achieved in ante-natal and post-natal care and in nutrition delivery to the 0-5 age-group.

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V. Employment

Out of 15 selected districts, by mid April, the area skill surveys providing detailed areawise data on employment and self-employment opportunities expected to occur during the next 5 years by industries and skills have been completed for 12 districts and are being used to deal with unemployment and provide career advice, training, job development and employment market information in the area. The 4 regional boards at Bombay, Calcutta, Madras and Delhi are pushing forward the implementation of the Apprenticeship programme (Tamil Nadu reports training 7,781 apprentices against the target of 7,593 as at March 31), 2,25,115 were placed in jobs by employment exchanges between June to December 1975, and a large surge forward in the voluntary training programme of unemployed engineers and technicians is reported. In this connection, the National Textile Corporation is employing unemployed graduates in a scheme to take its products to the door steps of rural consumers. The student receives a commission varying from 8 per cent for a turnover of Rs. 1,000 to 10 per cent for a turnover of Rs. 5,000.

The Union government announced in April its tentative plans to curb the migration of highly trained scientists. The March UNCTAD report pointed out that when a medical doctor leaves India to settle in the US, India loses Rs. 3,33,000 and the US gains Rs, 51,75,000. In 1970 it pointed out there were 3,141 Indian doctors in the US contributing Rs. 6,563 million to that country as a result of the brain drain. The 1971 estimate is that there are 30,000 scientists and engineers abroad, of whom 17,000 are post-graduates and 5,000 Ph. Ds. The government has therefore under consideration requiring certain essential and scarce categories of Indians employed abroad to repatriate home a part of their earnings, to replace all recruitment of Indians by private bodies and foreign governments, so that all such recruitment will be through official channels which will call for no foreign country advertising jobs directly but through the government, and a change in the Passport Act to make the issue of a passport for persons in certain special fields difficult to obtain. The labour Ministry reports a favourable turn in industrial relations in 1975, with a loss of 19.24 million mandays (compared to 40.25 million in 1974) due to strikes and layoffs. Bipartite National Apex and State Boards are at work reviewing industrial relations and promoting industrial peace. Employment in the organisad sector increased from 19.28 million workers in March 1974 to 19.64 million workers in March 1975 (a lower 1.9 per cent increase compared to 2.4 per cent increase in 1974). The total number of job-seekers rose by 10.6 per cent from 84.33 lakhs in December 1974 to 93.20 lakhs in December 1975 and the number of educated job-seekers increased to 43.42 lakhs at June 30, 1975 compared to 40.42 lakhs in June 1974—a rise of 7.7 per cent. The composition was 20.06 lakh matriculates, 11.01 lakh under-graduates, 8.35 lakh gradutes and post - graduates and 11.28 lakh women. The government also reports that since March 5 when the new law barring units employing more than 300 workers declaring lay offs and retrenchments without government permissions, there has been no retrenchment or lay off upto end of April. Tamil Nadu reports that all the 17 stoppages of work, 14 strikes and 3 lockouts involving 24,000 workers were settled and the State level Apex body is at work to promote harmonious industrial relations. Also from March 2, the State government announced revised farm wages at rates ranging from Rs. 3.50 to Rs. 5 per adult per day except in the 7 taluks of East Thanjavur, where a special agreement is in force (see Vol. V. p. 485 and Vol. VI. p. 222). UPASI and ESUCI also announced wage increase for tea, coffee, rubber and cardamom estates workers ranging from Rs. 30-Rs. 70 per month under a 3 year wage settlement from 1 January 1976 covering Tamil Nadu, Kerala and Karnataka.

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VI. Other Items

College and School Days in Madras:

March and April were the traditional annual days for Schools and Colleges in Madras. Vidyodaya celebrated the occasion through inaugurating its cultural centre in which dance, painting, embroidery and cooking are taught as disciplines separate from main Vidyodaya courses. St. Mary's Higher Secondary School celebrated its annual day, laying the foundation stone for its science block and calling attention to the effective manner in which it is operating under the Central Schools System as a Higher Secondary School. The Cultural Academy, Mylapore, also had its convocation and annual day at this time when the 12 year institution's need based flexible programme for women's education at both post-graduate and under-graduate levels showed up as a model and an occasion for the University considering bringing institutions like this under its purview. Among colleges, the Government Arts College for women in North Madras on its Annual Day emphasised the needs of its large number of first generation learners, and the feasibility of locating one of the inter-collegiate facilities on its premises. Similarly the Vivekananda Evening College anniversary celebration was an occasion to review the place of evening colleges in the system of formal and non-formal higher education and the means of giving this form of education a further fillip. Ethiraj College organised in April a function to bid au revoir to its retiring Principal who brought to the college and the university the valuable qualities of grace, quality education and the capacity to unify teachers and students around the basic concept of higher education.

Colleges in East Thanjavur :

In March six colleges in East Thanjavur celebrated their annual days—Bishop Manickam Lutheran College, Tranquebar, the SDAMA college for women, Nagapattinam, Avaiyyar Government College for women, Karaikal, Arignar Anna Government College for men, Karaikal, AVC College, Mayuram, DG Government Arts College for women, Mayuram and the Poompuhar Peravai Kalloori, Melayur. With the exception of 3 of the institutions, the poverty of the building accommodation, the paucity of books and equipment and the generally depressing atmosphere of the institutions were noted. This gives support to the decision not to keep opening new colleges during the remaining 3 years of the Fifth Plan—colleges for which there are no resources.

Futurology and Growth Employment :

SCERT and IIT organised in Madras a seminar on Education in Tamil Nadu in 2001 AD. Reviewing the trends in education and science in the State, the major conclusion was the need for the universities and the higher education institutions in the State to set up cells and groups to work out the profile of society, education and science in the coming two and a half decades, in light of which current decision of educational reform and application of science to rural development can be made. The Commonwealth

Centre on Youth Education and training in Chandigarh covers the area of Asia and Pacific and is running a well designed post-graduate diploma course for youth leaders for some 17 countries in the region. One of the emphases in the course is the problems and potential of youth employment in this vast region and the major conclusion on this subject was the need for the centre developing specific area information on the employment prospects and potential which is currently lacking.

Tourist Trade Fair and ONGC Seminar :

The Annual Tourist Trade Fair Madras concluded a very successful operation in early March. The Fair provided an impressive exhibition of the temples, beaches and other places of tourist attraction in the State, was visited by over 10 lakh persons and brought together both ttaditional and modern handicraft and farm technologies for the benefit of the visitors. ONGC and ISI organised a good seminar in March in Madras on coastal sedimentaries of Southern Coastal Region. Attended by over 150 engineers and scientists, the seminar laid down a programme for offshore and onshore oil exploration in Tamil Nadu coast, mineral exploration in the Kerala coast and a plan for tracer studies of the regions clay and water resources.

Staff College and NCERT :

The annual governing board meeting of the National Staff College decided on a programme of training of District Education Officers, particularly those responsible for 10+2 stage and the administrative staff of Universities and higher education institutions. The research programme of the college will concentrate on the linkage between 10 and + 2 and + 2 and the 3 year first degree. The continuing programme of manpower research will be its other major emphasis. NCERT's committee on Educational Research and Innovation meeting in New Delhi in March laid emphasis on more scientific evaluation of completed research projects, and called for sponsored Research on Project social relevance and impact on the educational system, in addition to the traditional investigations in the pedagogical field now underway in training institutions. NCERT also called in April a meeting of its Editorial Board on civics and economics. drew up the curriculam for the 9th and 10th standards in the 2 subjects, and suggested authors to write the text-books.

IAEA and IUACE :

The Indian Adult Education Association's Executive Committee meeting in March set up a Trust to oversee its growing building programme of the 5 day Seminar of agricultural extension workers at Ludiana and confirmed the dates of the Annual Conference at Karnataka from October 15-18. It decided to invite the Vice-President of India to inaugurate the conference. The Indian University Association for continuing Education held the second meeting of its Executive Committee for the year in Delhi in April and reviewed the programme for the 3 day workshop on Adult Education as a discipline to be held in June at Sri Venkateswara University, Tirupati, and decided to organise a 6 week training course for staffs of 11 Departments of Adult and Continuing Education at the University of Madras from December 1 to January 10. For the first 3 weeks of the course Roby Kydd, one of the world

authorities on Adult Education and Secretary General of the International Council of Adult Education will direct the course.

Board of Continuing Education and Andhra Mahila Sabha :

The Board of continuing Education, taking advantage of Dr. Kydd's visit to Madras for 3 days in April, organised in co-operation with SCERT a seminar on Non-formal Education and Formal Education, and used the occasion to publicise the decision of the government to set up a special office of Non-formal Education. The Board also had its six monthly meetings at that time at which it reviewed its programme and statement of accounts, approved 2 projects for loan finance from the Bank of Madurai for scholarships in Non-formal Education and a co-operative boat society for the students in the project, and had Dr. Kydd offer his comments on its programme. Dr. Kydd also delivered a public lecture in the University on world trends in Adult Education. The Andhra Mahila Sabha had 2 meetings of its Administrative Committee in March and April when the process of economising on its expenditures and ensuring a rationalised and efficient health care service under the direction of the new Superintendent Dr. Mrs. Nayudamma were continued.

ICSSR and Family Planning Foundation :

A meeting of the Research Advisory Committee of the ICSSR was held in March at which some 50 projects were reviewed and approved, with special emphasis on the priority areas of research into poverty, unemployment, and urbanisation. Meetings of the International Relation Committee of the Council were held in March and April to lay down the Council's international policy and decide on representation of the Council at International meetings and participation in bilateral cultural agreements. The annual meeting of the Advisory Council of the Family Planning Council held in April and recorded its deep appreciation of the excellent, well rounded programme developed by the small staff in accordance with criteria and guidelines laid down by the Council. It decided to give special financial and technical support to the National Population Policy just formulated by the government and referred to earlier.

IITS and Academy of Sciences :

A meeting of the Board of Governors of the International Institute of Tamil Studies was held in March at which the Honorary Director of Programmes was appointed and the programme restructured in line with the original purpose of the Institute, including research on Tamil Archaeology, History and Linguistics in addition to literature. Also a programme of UNESCO co-operation was established and forwarded to UNESCO through the Indian National Commission. On April 23, Tamil Nadu Academy of Sciences was inaugurated at a meeting held in the University of Madras with 55 founder fellows and a constitution which provides for 200 fellows. This is one more Perspective Plan project now being executed and when the Tamil Nadu Science Federation is established by the government the science and technology sector of the State will be considerably strengthened. The Tamil Nadu Academy, unlike others, comprehends all sciences—hard and soft.

Southern Railway Week and Bhoodan Week Celebrations :

Southern Railway week was celebrated in Madras on April 15, which marked the 125th year of Indian Railway and the 25th year of the formation of Southern Railways. The occasion was used to recognise the outstanding services rendered during the year by some of the railway personnel and to reflect over its tasks ahead. Some of these included the need for increased investment in railways particularly to increase its wagons and coaches, and to push forward its lagging programme for gauge conversion, electrification and dieselisation. Above all there is need for improved financial performance of the industry, so that it can claimb out of the perennial deficits and losses that it faces. This will involve a co-ordinated approach to all forms of public transport—railways, trucks and shipping. April 30 was celebrated as Bhoodan day in the Gandhi Mandapam. On this occasion of the 25th anniversary of the Bhoodan Movement, the significance of the fact that under both the Bhoodan and the land ceiling legislation, 21,000 acres of land have been to date distributed under each of programme was noted, and the need for both programmes to co-exist and complement and reinforce each othei was emphasised. In regard to both railway economics and the fundamental assumptions of the economic system represented by the philosophy of the Bhoodan Movement, there is need for the University of Madras to take the leadership through the economic department in assisting the two agencies.

Ramanathan Memorial Lecture, Jaffna :

April 16 was the anniversary of Ponnambalam Ramanathan, an educator, scholar, humanist and philosopher of Sri Lanka, whose college has now become the Jaffna campus of the University of Sri Lanka. On the occasion of the anniversary, the Vice-Chancellor of the Universities of Madras and Sri Lanka met at Jaffna and discussed ways and means of the two Universities co-operating with each other and exchanging information on the administrative problems as well as academic and substantive studies. The public lecture on the occasion dealt with the problems and prospects of higher education in South Asia.

Nehru Award for International Peace and Understanding :

The 1974 Nehru Award for International Peace and Understanding was presented to Mr. Roaul Prebisch on April 26 at New Delhi. In his award oration, Mr. Prebisch referred to India's remarkable success in containing and reversing inflation without slowing growth, and called attention to the outworn theories that growth will ensure alleviation of poverty and that the market will ensure equitable as well as efficient allocation of resources. He called for planning for future as well as current development, paying due attention to population, pollution and resources depletion, which will affect future generation. UNCTAD IV he hoped will represent a land mark in establishing the new Economic Order in new just relations between the centre and the periphery.

University Events :

March and April were busy and eventful months for the University. There were the exhibitions organised by the Department of Bio-chemistry, the USIB information galley was inaugurated, meetings of the Research Scholars

Association, Seminars on projections of demand for graduates and post-graduates in the State upto 2001, preparations for a study on the city's cattle problem, for formulating a University programme contribution to the national project of integrated rural development and for preparing an international literacy manual for UNESCO and for using NSS to push forward Non-formal Education programmes. The Syndicate Committee on affiliation met and established criteria for approval of fresh affiliations, with no new colleges to be established during the year, the committee on affiliated colleges planned the second Rs. one crore programme for financing inter-collegiate facilities for metropolitan colleges, and dealt with disciplinary cases arising from the appeals and complaints from staff and students of colleges. Board of studies met to finalise the semester system for the M.A. courses and for B.A. course in selected colleges and to prepare the building of question banks followed by 2 seminars in Madras and Coimbatore for Principals and Professors teaching undergraduate students, in 38 selected colleges on semester system, and 3 orientation courses for post-graduate professors on the grading system and the restructured question paper at Madras, Coimbatore and Tiruchy. The University/UGC committee reviewed the programmes of the seven autonomous colleges and recommended the resubmission of their programmes in light of a number of suggestions made to them at the committee by July for a final review and approval. The Lions Club of North Madras presented an endowment of Rs. 45,000 to the University for an undergraduate fellowship programme. The supplemental convocation was held on March 25 for Research scholars and prize winners. Two meetings of the Syndicate in March and April were held to prepare the above items, approve appointments, establish the Advisory Committee on Industry and Trade, launch the Departments of Adult and Continuing education and Fundamental Space Research, establish a special maintenance and development fee and conditions of service of teachers in private aided colleges. The Academic Council met in March to approve the semester system, the switch-over to grading, and the new syllabi recommended by the Board of studies. The Senate met at the end of March to approve the recommendations of the Academic Council and Syndicate, the report of the University for 1975, the audited accounts for 1974-75 and the budget for 1975-76.

Special Seminar :

The Special Seminar on Work Experience, Pre-Vocation and training in Non-Formal Education was held on April 30, at Regional Technical Teachers Training College, when the paper by Prof. Jambulingam on Vocationalisation of Higher Secondary Education was reviewed. The establishment of a committee on vocational education under the Board of Higher Secondary Education, the need for establishing a guidance and counselling cadre in the high-school to guide students in their educational choices at the higher secondary level, and the type of vocational syllabi together with their cost implications were reviewed in detail and approved.

April Development Seminar :

The April Development Seminar was held in the Seminar Room of the Institute on April 29 when the paper on Progress in R and D in Tamil Nadu by Mr. Basu John, Professor IIT, Madras was reviewed. The paper its together with a summary of discussion at the seminar appears at the first article in this issue.

Second Article :

A paper, Some Aspects of Coastal Sedimentaries, appears as the second article.

PLANNED R & D

by
Dr. BASU JOHN,
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Since it is assumed that the portion of the total investment in the economy spent on R & D is limited, it is necessary that a choice is made as to where and in what fields to locate this available investment.

A systems approach to a viable model for an R & D scheme in the broad areas of agriculture and animal husbandry, mining and manufacture, transport and communication, education etc. indicate the following steps involved :

1. To identify priorities in allocating R & D investment between alternative avenues for investment (WHAT)

2. To ascertain the extent of the gap between existing institutional capability and the extent of such capability that will be required to implement the schemes decided upon (WHERE)

3. To establish an organisational structure that can implement the R & D Plan. Such a structure must deal with the following problems for implementation of these schemes (HOW)

(a) targetting results/scheduling time

(b) establishing amount and source of funding

(c) location and transfer of funds

(d) utilisation monitoring performance evaluation

(e) provision of research group/ individual motivation

(f) result evaluation

(g) transfer of output to user

(h) user participation and control and

(i) Feed back to planners

Traditionally the choice was made on the basis of the effective demand for a product or process and the responsibility for the 'What, When and How' was located in an individual or organisation who were also the final users, simplifying the sequence of decision making, linked responsibilities and motivation and control necessary for successful implementation.

A planned economy attempts to make the choice on a rational basis. The aim is to allocate available investment in R and D in such a way as to provide the maximum possible returns in increased productivity for available investment. As

institutionalised R and D in the present situation, is often located far removed from the policy makers, planners and not even in direct contact with the funding or user organisations, the need for a viable organisational set up to make rational choices and to motivate effective implementation of R and D schemes is obvious.

The responsibility for policy and decision making vests with the Central and State Governments and the Planning Commission. While it is not attempted to comment on choices made in the 'what' and 'when' of the R and D schemes in the Tamil Nadu Plan for Science and Technology 1974-84, the following points are offered for consideration.

(a) the allocation of R and D funds in different areas as a fraction of the total investment in the areas, and

(b) The infrastructure and staff enhancement required in typical projects as a fraction of the total project.

The choice of 'what' may not have been made according to rational priorities, being need based, while the 'where' being determined by maximisation of returns for the investment, is open to question.

However, a serious failure in the plan implementation has to be accepted. It is suggested that this can be attributed to the failure to specify a viable methodology of implementation as part of the planning effort.

For instance the targetting of results and time scheduling were carried out by the planners and the decision making groups to suit the requirements of the projects proposed and not *vice versa* and was not under the control of any of the researchers involved, the allocation and transfer of funds, while theoretically under the control of the planning body, could not be implemented as the only funds available were in Departmental or Research laboratories budgets. Responsibility for utilisation, monitoring, performance and result evaluation has not been identified, while research group and individual motivation has been left to project specialists group leaders who have no control over aspects of transfer of funds, time schedule etc. The methodology for transfer of output and user participation and control in the development, and feed-back to planners does not feature in the plan paper.

In the loose linked set-up described, where large areas are left to be identified in the sequence of responsibility, monitoring and control, it is not surprising that the implementation has been limited to a few stray projects some of which would have been undertaken even without being included in the plan. As an alternative to the present form of funding and responsibility for implementation a possible model is suggested that may be adopted as a structure for ensuring a better chance of success in the implementation of the R and D projects envisaged in the Tamil Nadu Plan for Science and Technology.

Consisting of the policy makers, planners and the evaluation group represented by the Government and planning bodies who are also the main funding source ; the co-ordinating,

monitoring and motivating authority embodied in the specific departments through whom the major investments in the area are channelled ; and the research section where the development is actually conducted and the proposals implemented, the model approximate to an expanded version of the simple traditional one organisation scheme linking responsibility and control for effective implementation of the R and D plan.

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Summary of Discussion

In the discussion of the paper at the Seminar held in the Seminar room of the Institute on Thursday, 29th April, 1976, under the chairmanship of Dr. Malcolm S. Adiseshiah, Director of the Institute, the author in his opening remarks observed that his paper was not a new approach to planning, nor in the nature of a detailed discussion of the R & D component and its content and location in the Tamil Nadu Perspective Plan. It, however, could be described as a comment on fhe approach and methodology followed in the Task Force Report on R & D projects listed therein. Provisional estimates of outlays over the Fifth and Sixth Plans have been presented in detail in the Task Force Report. There was, however, no mention of procedure for monitoring and evaluation at different stages of implementation. Another important factor requiring elucidation was the linkage between the projects envisaged and the ultimate user. Did the concerned individual or agency have a say in project design at any point in the R & D planning? Further, was there provision for a feed back from the user in the event of implementation. The distinction between traditional inhouse R & D in industry for instance with its objective of maximising benefit and the Research and development process as a part of planning at Government levels lies in the latter having to take into account a set of alternate choices and making rational decisions in terms of optimisation consonant with development objectives. An analysis of R & D planning indicates three main areas, first identification of priorities (WHAT), the sectoral allocation of plan outlay (WHERE) and the agencies responsible for implementing the schemes (HOW). Incidentally the response to a questionnaire circulated to elicit information on the progress made in the areas selected under the Task Force Report was poor and pointed to the conclusion that not much progress has been made to date. A perusal of projects in the report reveals an anomalous situation in as much as that although projects are located in the relevant sectors but largely not funded and in the instances where finding has been indicated, incomplete. The envisaged sectoral outlays show an uneven allocation for R & D, as for example, the projected outlay of Rs. 110 crores on education provides for 0.9 per cent of R & D, while agriculture with an outlay of 200 crores provides for 6.4 per cent. Have these provisions been determined by calculations of returns for

the marginal rupee invested? A survey of the estimates for the projects reveals that while such items as personnel, salaries and allowances were worked out in considerable detail, essential equipments for the projects had not been given detailed attention. Another important issue was whether some of the R & D required could be obtained more economically from agencies functioning outside the State in this field, releasing scarce resources for alternative investments. Implementation of the R & D plan would achieve a faster take off if a viable methodology of implementation is specified as part of the planning effort. A simple organisational model is presented in the paper as a step in this direction. Its structure identifies the responsibility for utilisation, monitoring, performance and result evaluation linking responsibility and control.

During the discussion it was pointed out that the Task Force Report is not Perspective Plan and not a master plan for science and technology. The mandate of the working groups presenting R & D projects derived from the broad priorities of the Tamil Nadu Perspective Plan model and is in the nature of a beginning, an inventory of projects indicating trends for further development. The emphasis on R & D infrastructure creation within the State in deliberate. The involvement of as many senior officers as possible in drafting these projects is a first step in creating an R & D culture which would prove an invaluable asset for state and National development. Commenting on the sectoral differences inl R & D allocation, it was stated that these sectoral allocations reflected Tamil Nadu's development priorities—a mechanical equality being neither desirable nor necessary. The basic problem is the absence of finance—which was made the plan a non starter.

The approach adopted in the paper focuses attention the necessity for organisation and management as a built-in constitutent of the planning model at all levels from the grass roots upwards. This will be useful to the scientists and planners when the present perspective plan is turned into an operational programme.

Some Issues raised by Coastal Sedimentaries*

The Stakes

This workshop on Coastal Sedimentation is timely. I estimate that we will be closing this financial year, which ends three days from now, with a serious balance of trade deficit of Rs. 1,200 – Rs. 1,300 crores. One major cause for this disturbing disequilibrium is our import this year of 13.95 million tonnes of crude, involving a foreign exchange outgo of Rs. 1,056 crores. Only five years ago, this import item cost us a little over Rs. 100 crores, and we were bickering with the foreign oil companies—Caltex, Esso and Burmah Shell—over a 20 cents per barrel increase that they were demanding over and above the $2 a barrel that they were charging. Writing in my Institute's monthly Bulletin in July 1973, I made the following assumption and predictions: " Crude Oil which was selling in 1969 at $1. 28 per barrel, in April 1973 was priced at $ 2.225 per barrel and will go up to $5 per barrel in 1980". That was also the Draft Fifth Plan assumption which forecastes the country's crude requirements at the end of the Fifth Plan, that is in 1978-79, at 42 million tonnes, of which 30 million tonnes was to be imported at a cost of Rs. 811 crores and even by 1985-86 (the end of Sixth Plan) the petroleum import bill was placed optimistically at Rs. 1,500 crores. Now with the per barrel price of $11.60, we are overjoyed at a small reduction of 9.5 cents per barrel last month by Iran and face this year an import bill of what the Planning Commission forecast for 10 years from now for a mere one-third of the crude volume forecast for that year. Such are some of the stakes that the country has in your workshop and which led me, an economist, to accept your invitation.

The Area

It would be useful if the workshop can agree upon the sedimentary areas in the South—which is what I assume your delimitation of "South of 18° N Latitude— means. From the point of view of oil and gas as well as mineral and water resources this area should be demarcated using a somewhat broad definition to include not only sedimentary areas but also sedimentary basins. Again I assume in using the generic term, sedimentaries, you have this wider spatial connotation in mind. Under such a definition, you will in your workshop be looking at not only the 32,000 sq. K.M. in the South Eastern and 10,000 sq. K.M. of South-Western India, but also the Cauvery, the Godavari, Krishna basins and the Andamans—in fact the sediments of the sub-continent's coastal belt running from Goa in the West to the Andamans in the East.

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* Extracts from the inaugural address by Dr. Malcolm S. Adiseshiah to the Workshop on Coastal Sedimentaries of India South of 18° N. Latitude, sponsored by Oil and Natural Gas Commission and Geological Survey of India, at Hotel Chola, Madras, on March 28, 1976.

Oil Prospects

In a similar Seminar 10 years ago, I notice that there was a good deal of speculation and some disagreement as to whether the Southern sedimentary basins are oil-bearing. On the one hand, the thickness and facies of sedimentary sequences and the tectonic peculiarity of the sedimentary basins were held to confirm their petroleum prospects—despite the somewhat scanty data. On the other hand, the oil explorations carried out in the region resulted in the low-priority given both by ONGC and GSI to the Cauvery basin—which if I may say so has persisted to this day. This is natural in our situation of crisis, where the priority to Assam, Bombay, Kutch with their proven reserves or more definite prospects was and is understandable.

In this scientific workshop, it would be useful for a definite scientific opinion to be formed about the oil prospects of the Southern sedimentaries. One question that we should like to see resolved is whether the offshore geology of the Cauvery basin is the same as or structurally different from the onshore geology of the Cauvery. I know that a definitive answer must await the analysis of the survey data collected by ONGC's Anveshak. But judging by the preliminary results of the analysis of the geological data of the other side of the Palk Straits, I for one am guardedly optimistic about the sedimentaries stretching from the Cauvery to the Andamans. I look forward to the Commission's offshore investigations over the 26,000 sq. K.M. stretching from Pondicherry to Cape Comorin confirming the occurence of oil in this region as well as along the Mangalore and Kerala coasts.

Gas Occurrence

Another economic property of our coastal sedimentaries is natural gas. We do not need it for the usual use to which it is put in the cold effluent countries of the Northern hemisphere, the heating of homes, nor would I give it use as a domestic fuel, to which the Bombay High find is being put, as a high priority. For our arid and semi-arid land, which covers around 50 per cent of land surface in Southern region and which in addition is subject to periodic monsoon failures, the conversion of natural gas into water (through desulphurising) is an urgent and high priority to save our dry land farming. The two kilograms of water which one kilogram of gas can produce is a precious resource. I would urge the workshop to review the occurrence of this potential resource, particularly in the submerged forests of out West coast region.

Another resource which awaits your further investigation is our clay resources in our coastal sedimentaries. We know we have vast clay deposits, we also know that they are of various varietal types. The problem here is both technical and techno-economic. The technical problem is to undertake a thorough scientific investigation of their mineralogical and chemical composition in order to classify the types by properties. For this we need the kind of well-equipped laboratories which we have which can use the X-ray methods, the electron microscope studies, differential thermal analysis and infra-red spectral investigations: this is one of the areas which I have my eye on. The techno-economic aspect is to determine the suitability of different clays for different industrial purposes and on the basis of such demand estimates, to help

entrepreneurs launch clay product industries.

Other Minerals

The onshore identification of economically viable minerals is in good shape. Zircon found in the fine granular black sands in the Kerala coast, alongside of ilmenite (found also in three districts in this State and two in Andhra Pradesh) and the monozite deposits in the Kerala coast and Cape Comorin are a worthy start of which our geologists can be, proud. And then there is our lignites whose vast millions of tonnes of reserves, are the subject of open cast mining operations, used for meeting the growing power deficit in our power starved Southern Region, as well as for producing urea, carbonized briquettes, char fires, middle oil, tar and phenol. As Vice-Chancellor, I have a particular interest in this open cast mining operation, not only because it provides the University Geology and mining Professors and students practical in service experience which they need, but more because it is only through interaction between University scientists and the working engineers that break-throughs like the identification of germanium occurring in our clays can be achieved and used in our transistors. I offer to the workshop the service of the University geologists for undertaking the trace studies in clays for producing on a commercial scale the processes and much needed minerals.

Then again we have the little explored and certainly untouched minerals of the ocean bed where there are enormous accumulations of sodium, calcium and magnesium in limestone and dolomite silicon and sand stones, carbon, sulphur and iron, waiting to be explored and explored. The benefit-cost ratio of their exploration and exploitation and their commercial viability needs to be worked out and here again the University economists and cost accounting specialists can be of help.

Water

Our water resources—so essential for agricultural, industrial, scientific research and domestic purposes—also need your attention. We all know how the Geological Survey of India saved our lives in this city last summer through locating the Thiruvanmiyur ground water source. I would plead that we do not wait for a crisis to use our geological and geophysical know-how but complete the hydrological mapping of the coastal region in order to establish firmly the structure, extent, thickness and composition of the acquitees. And to do this, we do not need any external aid. We have all the scientific resources needed to do the task ourselves.

Interdisciplinarity

I wish to end by referring to a possible indirect result of your workshop and to the interdisciplinary nature of your effort.

I do not know how many of you are aware of the worrisome fact that the rate of savings and capital formation in the country has been steadily declining over the last three years. These years are also the years when there has been the annual 10-fold increase in the foreign exchange outflow of our national income to pay for our oil imports. The two are not un-connected. I am of the view that the reduction in real income in our country caused, inter alia, by the deterioration in our terms of trade brought on by the oil crisis has reduced consumption, savings,

investment and employment—all simultaneously. In so far as your workshop can contribute to increased self reliance in the crude oil area, you would be contributing to our reaching the path of self-sustaining growth.

Finally, I am glad that your workshop is an interdisciplinary effort. Coastal sedimentaries call for the skills of the physicist and geophysicist of the sedimentation process, the chemist dealing with chemical sedimentation, the geochemist for the chemical end result and of course the geologist, geomorphologist, mineralogist. You have realised a simple basic truth which disciplinarians tend to forget—all disciplines, in the hard as well as the soft sciences. What faces us in our society is not geological problems, or geophysical problems, but commercially viable sedimentation process problems to which the economist and cost accountant also must make his contribution.

It is in appreciation of this integrated approach that you bring to this seemingly sober but momentous problem that I take pleasure inaugurating this workshop on Coastal Sedimentations South of 18^{0} attitude.

THE SIXTH CENSUS OF SOCIAL SCIENCE RESEARCH IN TAMIL NADU

The sixth census (1976) of Social Science Research in Tamil Nadu conducted by the Institute follows the fifth census reported in the Bulletin Vol V, Nos. 5 & 6, May-June 1975, issue.

The questionnaire issued in February 1976, was addressed to the five Southern Universities, including the Indian Institute of Technology, 2 Departments of the State Government, 3 Research Institutes in the city, 2 Institutes of Rural Higher Education, 24 colleges in Tamil Nadu and the Directorate of Census, Government of India, Madras. In addition the Directorate of Collegiate Education circulated the questionnaire to the affiliated colleges of the Madras University. A total of 128 reports under 15 different disciplines have been received as against 117 reports in 1975 covering 14 disciplines.

This year also Economics is well ahead of all other disciplines with 33 reports. Under Agricultural Economics there are 22 reports, Psychology 15, Geography 12, History 10, Social Work and Sociology 6 each, Education 5, Criminology and Demography 3 each, Commerce 2 and one each in Anthropology and Linguistics. Two fresh additions this year are Philosophy with one item and Physical Education 8. A tabular statement of the six census reports is given belew.

Sl. No.	Discipline	1971	1972	1973	1974	1975	1976
1.	Economics	85	42	125	51	41	33
2.	Agricultural Economics co-operation	—	—	49	22	18	22
3.	Economic History	—	—	—	1	—	—
4.	Commerce	—	—	5	2	1	2
5.	Education	—	5	2	2	1	5
6.	Criminology	—	—	2	2	3	3
7.	Geography	—	—	1	4	6	12
8.	History	8	8	4	9	16	10
9.	Politics & Public Administration	—	—	1	2	2	—
10.	Psychology	31	11	14	12	15	15
11.	Social Work	—	5	7	6	8	6
12.	Sociology	7	4	2	6	2	6
13.	Anthropology	3	—	—	—	—	1
14.	Home Science	44	36	—	—	—	—
15.	Linguistics	—	—	56	—	—	1

Sl. No.	Discipline	1971	1972	1973	1974	1975	1976
16.	Demography	—	—	—	—	1	3
17.	Town & Country Planning	—	—	—	—	2	—
18.	Multidisiplinary	—	—	—	—	1	—
19.	Philosophy	—	—	—	—	—	1
20.	Physical Education	—	—	—	—	—	8
21.	Others	—	4	2	—	—	—
	TOTAL	178	115	270	119	117	128

In addition, 33 colleges have submitted NIL reports, including colleges which have post-graduate courses of study. This is a serious lacunae demanding corrective action. Research is necessary not only for enriching the teaching content and learning process at the post graduate level, but also for adding to information and knowledge and contributing to the good of the state and national development. Every college with post-graduate courses of study should encourage research in social science disciplines. This is one of the urgencies facing post graduate colleges in Tamil Nadu and there are UGC and ICSSR resources to help the professors and colleges in this endeavour.

In spite of the stress laid on the need for interdisciplinary approach in research in social and economic problems at the annual meetings of the Heads of Departments of Social Sciences, it is discouraging to note that no attempts are being made in this direction in the current research work of the colleges and Universities. To this extent the major issue of our times, resources, poverty employment, technology impact are not being researched. Most of the project reports are on micro problems in the various disciplines, limited mainly to small geographic or demographic areas or some single economic activity, though there are some broad based studies. The items of research in History are mainly on ancient history. No reports in Home Science, Politics and Economic History have been received.

Out of the 128 reports, more than 69 per cent (89 numbers) are degree oriented research work—47 for the Ph.D. and 42 for the post graduate degree or diploma. There are two research reports by B. A. degree students ia Geography. In the college of Rural Higher Education, Coimbatore and the Maruthi College of Physical Education, Coimbatore, both of the Sri Ramakrishna Mission Vidyalaya complex, a research dissertation appears to be one of the compulsory items of test for the post graduate diploma in Agricultural Economics and Co-operation and Master's degree in Physical Education respectively. This pattern of original work by post-graduate students seems desirable in all post-graduate courses in Social Sciences, as it would give not only some training in research work but would also awaken in the students a desire to study social problems by themselves. The other projects reported are sponsored by the Departments of the Colleges or

Government or by the U.G.C. and in one case by the F.A.O.

There is an almost complete absence of fundamental research in growth of economic thought or development of methodology in Social Sciences. The duration of the projects for the Ph.D. degree extends over long periods, in several cases for more than five years and in some cases for 8 to 9 years.

As an example it is suggested that a programme for research drawn up by consultation among the Heads of departments of Social Sciences, with items in each discipline, could be established for research work in each college for a period of 3 or 5 years. This list should be established to study the various aspects of any single problem of importance like unemployment, poverty etc. or should cover the various aspects regarding the development of any geographic area which is economically backward. There is also need for establishing liaison between Government, and the academic institutions so that the research work may prove more useful and also with industrial and agricultural enterprises.

ECONOMICS :

Madura College, Madurai.

1. Changing the agrarian pattern in Tamil Nadu since Planning.

The aim of the study is to assess the changing pattern of the agrarian economy of Tamil Nadu with special reference to Madurai and Tanjore districts since planning.

Random sampling method to be used.

Commencement—Oct. '75
Completion —Oct. '80
Degree —Ph.D.

2. Unemployment problem in Tamil Nadu since plan period.

To study the changes that have taken place in the employment structure of Tamil Nadu economy during the three Five Year Plans and the three Annual Plan periods.

By collection of data from secondary sources as published in government publications, R. B. I. reports and records of the Employment Exchange and Planning Commission.

Commencement—July '75
Completion —July '80
Degree —Ph.D.

Institute for Techno Economic Studies, Madras.

3. Mobilisation of resources in Tamil Nadu through agricultural taxation, rationalisation of irrigation rates and revision of electricity tariffs.

To assess the existing rates of agricultural taxation, irrigation rates and electricity tariffs and to explore the possibilities of mobilising additional resources from these and their effective implementation.

Commencement—15-7-'75
Completion —15-5-'76

Sponsored by Socio-economic Research Unit, Union Planning Commission.

4. Cost of Cultivation of Major Crops in Tamil Nadu (1975-76).

To review on a continuing basis the cost of production of major crops in the light of increasing inputs and farm costs, to evaluate farmer reaction to changes in the cost of cultivation and to assess the prices the farmer should obtain for his produce so that farming remains profitable.

The study covers four major crops in nine districts of Tamil Nadu which contain 90 per cent of the crop area. Over 1,500 sample farms are to be visited three times in the crop season to record inputs, costs, returns etc. in an elaborate schedule.

Commencement—15-4-'75
Completion —15-7-'76
Sponsored by a Firm in the Joint Sector.

Dharmamurthi Rao Bahadur Calavala Cannan Chetty's Hindu College, Pattabiram.

5. Economics of Scale, excess capacity and productivity.

To examine the validity of the older assumptions and theory regarding Economics of Scale, excess capacity and productivity of developing economics achieving economic growth through newer combination of capital investment, human skills and technical changes. A fresh interpretation of certain aspects of the Theory of Production has been attempted to support the possibility of continually increasing productivity inspite of the Law of Diminishing Returns—A case study of the Madras Refineries Ltd. has been made to illustrate the possibility.

Commencement—1967
Completion —1975
Degree —Ph.D.

6. Needs and activities survey of Sekkadu village—poorer sections of the rural community.

To find out the needs and attitudes of the rural labour, marginal and small farmers (both Harijans and non-Harijans) with regard to their future economic development and prepare a village development plan.

Commencement—Jan. '76
Completion —May '76
Degree — Nil

Jamal Mohamed College, Tiruchirapalli.

7. Panchayat finance in Tiruchirapalli District.

To study the socio-economic significance of financial operations of Panchayats and the problems associated with the operations. An examination of the source of funds and the disbursement.

Commencement—1-4-'75
Completion —In progress
Degree —Ph.D.

Hajie Karutha Rowther Howdia College, Uthamapalayam, Madurai District.

8. Manpower utilisation in Tamil Nadu.

To study utilisation of manpower, which

is available in plenty in Tamil Nadu, for its economic development and to suggest ways and means of utilising the manpower in all possible ways.

Methodology to be evolved.

Commencement—July '75
Completion —to be decided
Degree —Ph.D.

Presidency College, Madras.

9. Economic development.

Reported in Bulletin 1975, Vol. V. Nos. 5 & 6, Page S. 5.

10. Banking expansion and Economic development—a study in monetary entrepreneurship.

Reported in Bulletin 1975 Vol. V. Nos. 5 & 6, page S. 5.

11. Impact of urban land tax in Tamil Nadu.

To assess the impact of Tamil Nadu Urban Land Tax on land concentration. Case study.

Commencement—1-10-'75
Completion —30-9-'79
Degree —Ph.D.

12. Economic development technique of planning.

To evaluate the planning techniques and suggest alternatives.

Data from secondary sources.

Commencement—1-10-'73
Completion —30-9-'77
Degree —Ph.D.

13. Economic development.

Commencement—1-4'74
Completion —31-3-'78
Degree —Ph.D.

14. Economic development—Income distribution for economic development.

Commencement—1-10-'73
Completion —30-9-'77
Degree —Ph.D.

15. Economic development — Small Scale industry and economic development of Tamil Nadu.

Seconday data to be used.

Commencement—1-4-'75
Completion —1-4-'79
Degree —Ph.D.

16. Economic development—Community development.

To examine the working of community development schemes in various fields—agriculture, industry, rural health, co-operation, adult education etc—and suggest new ideas and methods for implementing the schemes effectively.

Commencement—1-12-'75
Completion —30-11-'76
Degree —M. Litt.

17. Panchayat Finance.

Commencement—Aug. '75
Completion —Aug. '75
Degree —Ph.D.

18. Economic development (Broad

field of Research)

Commencement—Aug. '75
Completion —Aug. '79
Degree —Ph.D.

19. Agricultural Taxation and economic development of taxation.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6. page S. 5.

20. Foreign trade and economic development.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, page S. 5.

21. Economic development.
Commencement—1-4'75
Completion —31-3-'79
Degree —Ph.D.

University of Madras.

22. Yield increasing method of rice cultivation and economic development.

To make a quantitative and qualitative assessment of the H. Y. V. programme for rice and its impact on economic development and rural life.

A diagnostic study comprising of a general survey of S. Arcot district at the district and block levels and an intensive survey of 10 villages with 216 households selected by stratified random sampling.

Commencement—Sept. '70
Completion —In progress
Degree —Nil

23. Development of education by private institutions with special reference to Pachaippas Trust.

To study the financial aspects of the development of education.

A case study method with secondary data.

Commencement—1-4-'74
Completion —1-4-'77
Degree —Ph.D.

24. Union-State relations with reference to industrial licensing policy.

Based on Secondary data.

Commencement—1973
Completion —1976
Degree —Ph.D.

25. Industrial development of Sri Lanka with reference to rubber industry.

To study the nature of completion between natural and synthetic rubber and the price trends in International markets.
Based on primary and secondary data.

Commencement—1-10-'75
Completion —1-10-'78
Degree —Ph.D.

26. Foreign aid and external public borrowing.

A study in development financing with special reference to India.

To study the extent of contribution of external capital for the development of various sectors in the Indian economy and the debt servicing problem of external capital.

Based on secondary data.

Commencement—Oct. '73
Completion —Oct. '76
Degree —M.Litt.

27. Institutional financing of small scale industries in Tamil Nadu.

To study the problems related to industrial finance, particularly for small scale industries.

Based on primary and secondary data.

Random sampling to be employed.

Commencement—Feb'75
Completion —1977
Degree —M.Litt.

Madras Institute of Development Studies.

28. Educational profile of jobs in Tamil Nadu.

Reported in Bulletin, 1975, Vol. V, Nos. 5 and 6, Page S. 8.

29. Commercial cultivation of vegetables in Tamil Nadu.

To be completed in 1976.

30. Link Road Investments in Tamil Nadu.

Commencement—8.1.'76
Completion —June '76

31. Mechanisation in agriculture and its impact on rural labour in Tamil Nadu.

Commencement—July '76
Completion —Dec. '76

32. Possibilities of crop rotation in Thanjavur District.

Study by the Institute in 1976.

33. Tribal Welfare in Salem District. Study by the Institute in 1976.

AGRICULTURAL ECONOMICS AND CO-OPERATION

College of Rural Higher Education, Coimbatore.

34. A stūdy of the pattern of the member beneficiaries of the Gandhinagar co-operative House Building Society Ltd., Attur Taluk, Salem District.

To identify the existing pattern of membership, to examine the extent of building loans and other benefits obtained by members and to postulate relationship models for the pattern of membership and benefits derived.

Purposive selection of a Housing Building Society, Field Survey and personal interview schedule of 80 members on simple random sampling employed for collection of datas with separate data sheet for society and schedule for members.

The chi-square test revealed the relationship between benefits derived and occupation and political affinity but no such relationship between caste and other personal features and benefits. The implication of the study was that the society should mobilise more resources and take care of the housing needs of the weaker sections.

Commencement—30-1-'75

Completion —10-3-'76
Degree —Post graduate diploma.

35. A study of the pattern of member beneficiaries of the Coimbatore Co-operative Building Society Ltd., Coimbatore.

To identify the existing pattern of membership in the selected unit, to examine the extent of building loans and other benefits obtained by members and to postulate relationship models for the pattern of membership and benefits derived.

Purposive selection of a House Building Society, Field Survey and personal interview of 80 members selected by simple random sampling with separate data sheet for society and schedule for members employed.

Chi-square test revealed insignificant relationship between amount borrowed and factors like caste, type of family, education, political affinity etc. However there was significant relationship between amount borrowed and annual income, savings, value of property.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

36. A study of the impact of Marginal Farmers and Agricultural Labourers Development Agency Scheme at Peddanaickenpalayam, Salem District.

To study the nature and working of the Marginal Farmers and Agricultural Labourers Development Scheme and its impact on the beneficiaries with special reference to occupation, income, indebtedness etc.

Field survey method and personal interview technique used, covering 80 beneficiaries chosen by a combination of stratified proportionate random sampling and systematic random sampling with separate schedules for the Agency and the beneficiaries.

The implications of the study warrants the organisation of promotional cell for non-formal education, introduction of crop insurance, provision of feed etc.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

37. A study of the impact of the Marginal Farmers and Agricultural Labourers Development Agency at Vazhappadi Block, Salem District.

Objectives and methodology same as item above.

The study has shown that the MFAL had succeeded in many respects by providing various types of assistance and thereby improved the conditions regarding employment, income and reduced indebtedness.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

38. A study of the working of Sri Ramakrishna Vidyalaya Multi-purpose Co-operative Society, Perianaickenpalayam, Coimbatore District.

To assess the general working of the Society, to examine the soundness of capital and study the various services availed by the members and their satisfaction.

Survey method was adopted. Information collected from 80 members selected by systematic random sampling and separate schedules used for the Society and members interviewed.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

39. The working of the Coimbatore city Co-operative Bank with special reference to the weaker sections.

To study the general working of the Bank, to examine the nature and extent of services and analyse the members' knowledge, satisfaction in working and management of the bank.

For collection of data two separate schedules used—one for the Bank and one for the members.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

40. An enquiry into the viability of the Mercunadu Industrial Co-operative Tea Factory Ltd., Nilgiris.

To examine the viability of the Factory with reference to ability to cover more membership, mobilize owned funds, render adequate timely services and to turn out more business.

Field survey method was adopted. Three stage sampling design was used viz Purposive sampling of the Factory, simple random sampling for 2 villages in the jurisdiction of the society and simple random sampling to select 80 respondents (50 members and 30 non-members).

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

41. A comparative study of the economic conditions of casual and attached and agricultural labourers in Pasakkuttai and Nanjappa Gouden-pudur villages, Coimbatore District.

To compare the economic conditions of casual and agricultural labourers, to identify the factors that affect their economic conditions and to suggest legal and ameliorative measures.

Field survey method employed covering 20 farm families and 30 labour households from each of the two villages. The survey showed that the agricultural labour class was greatly predominated by the lower castes and is in the lower income category.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

42. A study of impact of mechanisation on agriculture, Singiripalayam, Sathiyamangalam Block, Coimbatore District.

To study the extent and nature of mechanisation of farmers in relation to their socio-economic characteristics, to

assess the impact of mechanisation on labour, cultivation, productivity, and income and to identify the problems faced by the farmers.

The field survey method was used covering 100 farmers chosen by systematic random sampling from 2 villages of the block. Personal interview technique used. The findings were that the farmers used sprayers, threshers, motor pump sets, sugar cane crushes, tractor etc. The mechanisation was only after 1956. The extent of mechanisation had significant relationship on labour, cost of cultivation, and income.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

43. A study into the extent and causes of overdues of the Primary Land Development Bank, Peelamedu, Coimbatore.

To examine the extent of overdues in the Bank, to analyse the socio-economic characterstics of the defaulters and the causes for the overdues.

Field survey with personal interview with two interview schedules one for the Bank and one for the respondents used. The Bank and the village for survey were selected by purposive random sampling. By applying the stratified proportionate random sampling procedure, members were stratified into defaulters and prompt payers and 46 from the farmer and 34 from the latter group were selected. It was found that both the defaulters and prompt payers were mainly from farmers and were illiterates. The value of the land held by prompt payers was higher.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

44. A study of the socio-economic consequences of the co-operative sugar factory on the farmers of Palacode Block, Dharmapuri District, in relation to the cropping pattern, adoption of improved agricultural practices, employment opportunities and the socio-economic conditions of farmers.

Field survey method and interview technique employed for the study of two matched villages in respect of population and irrigation facilities—one impact village within two miles radius of the Factory and the other a non-impact village above the radius of five miles.

It was found that in the impact village the total average under sugarcane cultivation had increased from 28 percent to 63 percent, while the increase in the non-impact was only from 9 to 14 percent.

Commencement—30-1-'76
Completion —10-3-'76
Degree —Post-graduate diploma.

45. A study of the socio-economic consequences of the Co-operative Sugar Factory on the farmers of Mohanur Block, Salem District.

Study on the same model as the preceding one.

Commencement—30-1-'75
Completion —10-3-'76
Degree —Post-graduate diploma.

46. A study into the extent and causes of overdues of the Primary Land Development Bank, Tiruppur, Coimbatore, District.

Study on the same model as item 10.

Commencement—30-1-'76
Completion —10-3-'76
Degree —Post-graduate diploma.

University of Madras.

47. Poultry farming in Kerala.

To study the production and marketing problem of poultry farming and the extent of adoption of modern methods and the impact of governmental policies.

Based on primary data using purposive sampling.

Commencement—Jan. '76
Completion —Aug. '76
Degree —Nil.

48. Village resurvey.

To study the changes in village economy.

Veehoor village, Kerala, chosen for collection of primary data.

Commencement—Jan. '75
Completion —5-3-'76
Degree —Nil.

49. Agricultural development in Tamil Nadu.

Based on secondary data.

Commencement—Aug. '75
Completion —June '76
Degree —Nil.

50. Small Farmers' Development Agency, South Arcot.

To evaluate the programme of S.F.D.A. by use of primary data.

Commencement—Oct. '75
Completion —April '76
Degree —Nil

51. Marginal Farmer and Agricultural Labourers.

To evaluate the programme of M.F.A.L. based on primary data.

Commencement—1975
Completion —April '76
Degree —Nil

52. Potato cultivation in Tamil Nadu.

To study the economics of potato cultivation and to identify their problems based on sample surveys in selected villages in Nilgiris District.

Commencement—Dec. '75
Completion —June '76
Degree —Nil

53. Loans advanced by Nationalised Banks and agricultural development.

Primary data to be collected from 100 borrowers of loans—50 from Canara Bank and 50 from Syndicate Bank each in selected villages in Tamil Nadu.

Commencement—Jan. '76
Completion —Dec. '76
Degree —Nil

54. Tapioca cultivation in Kerala.

To study the economics of Tapioca cultivation in Kerala, Quilon District based on sample surveys.

Commencement—Dec. '75
Completion —May '76
Degree —Nil

55. Income savings and investment in Palghat.

To assess the pattern of savings and investment and the composition and the distribution of the income of the farmers, covering three years 1969–70, 1970-71 and 1971-72.

Data collected to be used.

Commencement—Nov. '75
Completion —Sept. '76
Degree —Nil

COMMERCE

Annamalai University.

56. Vanaspathi industry in India—a study of the problems of the industry.

Questionnaires, interviews, sample survey and field study to be used.

Commencement—22-3-'76
Completion —22-3-'80
Degree —Ph.D.

57. Control over monopolies.

To assess the working of government regulations.

Interviews and Questionnaires to be used for collection of data.

Commencement—1-2-'76
Completion —31-5-'77
Degree —Nil

EDUCATION

Sri Ramakrishna Vidyalaya Teachers College, Coimbatore.

58. Educational ideas of Sri Aurobindo and their implications for modern education.

Historical research method and by visiting the Au.obindo ashram for observation.

Commencement—June '74
Completion —April '75
Degree — M. Ed.

59. Reading speed in English of students studying in degree classes.

To measure the reading speed of the pupils of degree classes in English, correlate the reading speed with the level of comprehension, proficiency in English, economic and educational background of the parents and to make comparisons with factors as types of college, sex and locality.

Five types of passages—Diterars, Narrative, popular interest, short story and reflective—with a total number of 4,400 words used to test 200 students. Speed recorded by stop watch.

The study revealed that reading speed of urban students is superior to that of rural pupils, reading speed is highest in story

type material, comprehension of women is better than that of men and that there is a significant relationship between the economic status of the parents and reading speed of pupils.

Commencement—June '74
Completion —April '75
Degree —M.Ed.

60. The pronunciation of several sounds of English by pupils studying in Standard IX.

To help the teacher in giving suitable time and attention to the more difficult sounds.

The sample was 400 students (boys and girls) from rural and urban areas. Tools used were reproduction test for 50 pairs of words. Recognition test for 300 words. In formation sheet to be filled in by pupils, Questionnaire for teachers, and Data cards.

The results obtained show that the great majority of pupils were able to reproduce the plosive, affricate and fricative consonants and the vowel sounds and recognise the plosive consonants and the vowel sounds etc.

Commencement—June '74
Completion —April '75
Degree —M.Ed.

61. A diagnostic study of the errors in translating English into Tamil by pupils of standard XI.

To discover the difficuties of pupils in translating English passages into Tamil.

Sample was 320 students (160 boys and 160 girls from Salem schools). A written test for translation of previous year S.S.L.C. papers. Questionnaire used for gathering personal data of students.

Results obtained show that girls commit a larger number of mistakes than boys, there is no significant difference in nummber of mistakes comitted by pupils in English medium and those in Tamil medium, the pupils in urban areas commit more mistakes than those in rural areas etc.

Commencement—June '74
Completion —April '75
Degree —M. Ed.

Madras Institute of development Studies

62. Primary education and adult literacy in Tamil Nadu.

To be completed in 1976

CRIMINOLOGY

University of Madras.

63. Psychological and social factors associated with Recidivism.

The study aims to understand the relation of the factors of home environment, school, prior crime life, jail experience, friendship, habits and leisure time activities of the habitual criminal to Recidivism.

By depth interviews and questionnaire.

Commencement—July '73
Completion —July '77
Degree —Ph.D.

64. Mass media and Juvenile delinquency.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 13.

65. A study of drug addiction among college students.

Reported in Bulletin, 1975, Vol. V. Nos. 5 & 6, Page S. 13.

GEOGRAPHY

Sri Meenakshi Government College, Madurai.

66. Land use pattern and coastal geomorphology.

Methodology used was field observation and identification of post development, wave action, shoreline temple and Vivekananda rock.

Commencement—4-2-'76
Completion —5-2-'76
Degree —B.A.

67. Weathering, study of rocks at Tiruparankunram area.

Observation and identification were carried out in respect of changing land use pattern along Madurai-Tiruparankunram road and types of rocks and weathering.

Commencement } —23-8-'75
Completion }
Degree —B.A.

68. Measurement and study of water table fluctuation along Vaigai and at sample points in Madurai town.

Field measurements, processing of primary data and analysis preparation are employed.

Commencement—July '75
Completion —Aug '76
Degree —M.A.

69. Micro-level sample of rural India village.

Socio-economic survey of villages to picture an image of rural India (15 villages).

Both primary and secondary data used.

Commencement—Jan. '76
Completion —March'76
Degree —M.A.

70. Road and railway junction market, shopping survey, vegetable marketing and consumer behaviour.

To study characteristics of former railway suburban market, pattern, marketing of perishable goods and consumer behaviour.

Ranganathan street in Madras was selected for study due to its impact on residential population.

Commencement—11.3.'76
Completion —20.3.'76
Degree —M.A.

71. Survey of a shopping centre and consumer behaviour.

Schedules used for shop surveys and consumer interviews. Primary and

secondary data collected. Block maps were prepared. The survey was done in Pondicherry.

Commencement—8.3.'76
Completion —19.3.'76
Degree —M.A.

Madras University

72. The functional relationships between the hierarchy of settlements and patterns of information diffusion in Nilgiris District.

To bring out (1) the variations in terms of number and types of functions present in settlements, (2) the consumers preferences regarding their realisation of central functions, (3) awareness and adoptional patterns on specific information (4) controlling factors of information diffusion and (5) the relationship between central functions and awareness and adoption pattern of the settlements.

Secondary sources for first objective interview schedule oriented sample survey for second and third and analysis for the fourth and fifth employed.

Commencement—1.1.'76
Completion —1.1.'76
Degree —Ph. D.

73. The Tambaraparani Basin. A study in rural-urban relations.

To understand the relationship between the urbanisation and modernisation processes and between the rural and urban areas by study of the basic infrastructure of the area, demographic characterstics, urbanisation process, rural-urban migration problems and the existing growth centres.

Secondary data and information from published materials used.

Commencement—1.1.'72
Completion —30.12.'74
Degree —Nil
Aided by U.G.C.

74. Gobichettipalayam, Taluk: a study in the changes in agricultural land use.

To measure the changes in agricultural land use for 20 years, to study the impact of lower Bhavani Project on land use, to assess the land resource allocation to plan maximum production etc.

Secondary data used for studying changes in agricultural land use and primary data collected for studying impact of Lower Bhavani Project.

Commencement—1.4.'74
Completion —1.1.'76
Degree —Ph.D.

75. Market centres and consumer preference within Coimbatore Metropolitan area.

An attempt has been made to establish the functional hierarchy of market centres and the nature of consumer travel preference in the area and to establish empirical generalisation in the Indian context by comparing the data with other studies.

The official records of the commercial Tax Officer, Panchayat Unions and Town Planning Officers were consulted and for consumer preference study a sample survey with a schedule was conducted.

Commencement—1-4-'71
Completion —1-1-'76

Degree —Ph.D.

76. Wholesale market of grains and vegetables in Madras city—a geographic appraisal.

To understand the grain and vegetable market better in respect of its function and establish linkages with the rest of the city and the problems associated with lack of space, traffic congestion and pollution and suggest feasibility of establishing market elsewhere.

15 per cent of the grain and vegetable wholesalers and 120 retailers interviewed, delimitation of the grain and vegetable market studied.

Commencement—1973
Completion —Dec. '76
Degree —Ph.D.

Muthurangam Government Arts College, Vellore.

77. The impact of planning on the development of social services. A case study of Kanyakumari District.

To assess the impact of planning on the development of education Public Health, Post, Telegraph and telephone facilities. Data has been collected from villages, and maps are being drawn to show the spatial distribution at different dates.

Commencement—Jan. '76
Completion —Dec. '76
Degree — Nil

HISTORY

Annamalai University

78. The role of feudatories in chola history.

Reported in Bulletin, 1975, Vol. V Nos. 5 & 6, Page S. 16.

79. History of the later Pandyas.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 16.

80. Women in Tamil History and Literature.

Socio-economic and political status of women from 900 A.D. to 1,300 A.D. by investigating the literary and historical documents of the Chola and Pandya periods-

Commencement—23.10.1972
Completion —October 1977
Degree Ph. D.

81. Social life of the cholas with particular reference to trade.

A study by critically examining all the available sources.

Commencement—26.3.1973
Completion —May 1978
Degree —Ph.D.

82. The Thondaimans of Pudukkottai State

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, page S. 16

83. Toynbee's interpretation of Indian History.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6 Page S. 16.

Presidency College, Madras

84. Madras Presidency under Lord Pentland (1912-19).

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 15.

85. History of the Dalavay Mudaliars

Reported in Bulletin, 1975, Vol. V Nos. 5 & 6, Page S. 15.

86. Self respect movement.

Repoıted in Bulletin, 1975, Vol. V Nos. 5 & 6 Page S. 16.

87. Religion and religious institutions under Imperial cholas.

To study the position of Saivism, Vaishnavism, Budhism and Jainism during the time of the Imperial cholas and the role of temples in developing religion.

Places where the Cholas constructed temples to be visited.

Commencement—1.4.1975.
Completion —31.3.1979
Degree —Ph.D.

PSYCHOLOGY

Sri Ramakrishna Mission Vidyalaya Teachers College, Coimbatore.

88. A comparative study of the achievements of school pupils having both parents employed with pupils having only one parent employed.

Students' achievements studied in the light of parental supervision, economic status, educational facilities in relation to the employment of the parents.

206 students of Standard VIII had studied (113 boys and 93 girls) and heads of institutions and many parents were interviewed.

It has been found that when both parents go out for earning it is not at all conducive for the education of the children.

Commencement—1-10-1974
Completion —30-4-1975
Degree —M.Ed.

89. A survey of the courses and careers available for secondary school leavers.

The sample area was a part of the Coimbatore Educational District within 16 Kms of the City. About 200 boys and girls in standard XI from 7 High Schools were involved to whom an explorative questionnaire was issued to get insights into their felt needs. A questionnaire to 28 teachers were given to find out the needs of teachers who intend doing guidance. Occupational data also collected.

Majority of teachers have no idea of apprenticeship facilities and self-employment channels. The most popular diploma course among girls is nursing. Madurai University's correspondence course is popular. Job opportunities to S.S.L.C. holders were limited to clerical posts.

Commencement—Sept. 1974
Completion —30-4-1975
Degree —M.Ed.

Annamalai University.

90. A study of changes in racial and communal attitudes in Tamil Nadu, among college students.

Initially an empirical survey is made of the original attitudes of the subjects and then the changes if any caused.

Commencement—19-7-1968
Completion —continues
Degree —Ph.D.

91. Adjustment problems of the aged.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, page S. 18.

92. A study of the factors affecting the personal adjustments of college students.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 18.

93. Attitudes and adjustment problems of Foreign Nationals in India.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 18.

94. A study of the attitude towards Family Planning and birth control among college students and their parents in Tamil Nadu.

By constructing an attitude scale to measure the attitude of college students and their parents to study whether there is any attitude variations and whether religion plays a major role. Questionnaire used to collect information from a sample of 400 students from the Arts, Science and Professional Colleges and their parents.

Commencement—8-11-'67
Completion —1976
Degree —Ph.D.

95. A psychological study of consumer behaviour towards supermarkets in Tamil Nadu.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 18.

96. A study of the relationship of adjustment, anxiety and intelligence to the performance of students in X and XI standards in Physical and Natural Sciences.

Survey method to be employed with Questionnaire consisting of Attitude Scale, Socio-economic status scale and achievement tests.

Commencement—27-2-'75
Completion —27-2-'80
Degree —Ph.D.

University of Madras.

97. The perceptual and conceptual components of analytical vs global cognitive functioning in children and their relationship to intelligence and extraversion.

To determine the relation between field-independence dependence style of functioning and descriptive — relational conceptual style and also to the reflection — impulsivity style of functioning.

Tests on cognitive style were administered, correlation style was used.

The results show that the perceptual and conceptual operation clearly distinguish the analytical and global functioning in children.

Commencement—1-4-'73
Completion —1-4-'75
Degree —M. Litt.

98. A study of some of the factors related to the reading achievement of eleven year old children.

A study of some of the causes and effects of reading failures in eleven year old boys and girls.

Intelligence and socio-economic status were investigated.

Silent reading test, Intelligence test, a scale to measure socio-economic status and Behaviour rating scales employed.

It was found that reading failure impedes academic progress.

Commencement—January 1973
Completion —January 1976
Degree —M. Litt.

99. Impact of higher education on attitudes of women students.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 17.

100. Some aspects of social development in childhood (tentative title).

To study the factors which influence social development in early childhood, specifically the effect of child rearing practices of the family as they influence the co-operative and competitive behaviour.

It is proposed to develop rating scales for study of co-operative behaviour. These scales will form the basis for quantifying observed behaviour on the lines of the systematic observation schedules. An inventory to study child rearing practices and standard tests for intelligence, socio-economic status of the family to be used.

Commencement—October 1974
Completion —October 1978
Degree —Ph.D.

101. A study of the psychological development of infants.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 13.

Tamil Nadu Agricultural University, Coimbatore.

102. Decision process in farm families.

To study the patterns of decision making in familes with high and low adoption of agricultural technology, to identify the role of different family members, to examine the association between family structure and the process of decision making and to examine the association between adoption of innovation and decision process in farm families. Multi-stage sampling technique employed. Alanganallur Block in Madurai District was purposely chosen to represent the wet tracts with extensive adoption of high-yielding varieties of paddy. Two major panchayat villages and two minor ones selected purposely and households selected by simple random sampling.

Commencement—February 1973
Completion —August 1974
Degree —Nil.

SOCIAL WORK

PSG Arts College, Coimbatore.

103. A study of mental health in industrial settings.

To identify the characteristics of Self-Actualising people in industrial setting

and study whether basic gratification is a pre-requisite condition of self-actualisation.

Case study method to be used.

Commencement— } Proposals
Completion — } Submitted to
} U. G. C.

Degree —Nil.

104. A study of the *interaction* pattern of the College students belonging to scheduled castes and tribes in Coimbatore city.

To find out the nature of the social interaction of S.C./S.T. college students with campus community, *their* mobility aspirations and how far the protective discrimination policy of the government has created in them the feeling of equality in social life with other new SC/ST groups

Interview schedule to be used for a stratified sample of SC/ST students of Coimbatore city colleges.

Commencement— } Proposals
Completion — } submitted to
} U.G.C.

Degree —Nil.

105. A study of adjustment process of lady students in co-education institutions.

To find out the general pattern of interaction between women Students, teachers, men students and college administrative personnel, the different situations which are new to the women students, the different mechanisms they have adopted and analyse the change in their social values with reference to campus life, co-education and interaction with opposite sex.

A stratified sample of degree class girls of all *co-educational* colleges of Coimbatore city will be interviewed with a schedule.

Commencement—June 1976
Completion —Applied for
UGC grant
Degree —Nil

Madras School of Social Work

106. Problems of the aged in rural Tamil Nadu.

To study the problems of persons over 60 in rural Tamil Nadu with reference to family and social relations, employment and retirement, health conditions, economic conditions and leisure activities.

Area probability sampling method. 200 villages were selected and 1598 old persons were interviewed.

Commencement— } Sponsored
Completion — } by U.S.A.
} Government
Degree —Nil.

107. Peasant organisation in Pondicherry with reference to Karaikkal.

A case study of the organisation of the rural work, their functional and structural characteristics in the communes in Karaikudi.

Commencement— } Sponsored by
Completion — } FAO
Degree —No

108. Social welfare manpower requirements in Tamil Nadu.

To assess the utilisation pattern in social welfare manpower, the adequacy of the manpower and the future requirements of social welfare manpower.

Madras city and six districts are selected of the study. Interview schedule method to be used.

Commencement—August 1975
Completion —October 1976
Degree —Nil

Sponsored by the Department of Social Welfare, Government of India.

SOCIOLOGY

Annamalai University

109. Problems of Community Development personnel.

To find out the causes for the failure or successful functioning of the Community Development programme by studying the problems of the C. D. personnel and public.

Questionnaire to be issued to 100 persons in 10 blocks.

Commencement—3-8-'74
Completion —3-8-'79
Degree —Ph.D.

PSG Arts College, Coimbatore

110. Role relations between the teachers and the students — a study in Coimbatore city colleges.

To study the present existing nature of social contact between students and teachers, the role expectation and sole satisfaction of both in the campus, the different conflict situations between the two groups and find out the important values of teachers and students in relation to their academic and social life.

A stratified sample of college students and teachers in selected Colleges of Coimbatore city will be interviewed with a schedule.

Commencement—} Applied for
Completion —} U.G.C. Grant
Degree —

Madurai University

111. The Piramalai Kallar structure and change.

To study the aspects and features of the social structure of the Piramalai Kallars and attempt a description and sociological analysis of these features and aspects in a synchronic perspective, restricted to marriage, family, descent groups, kinship and authority. Also to study the social change that has occurred in this ex-criminal tribe.

Sample survey will be made of two Piramalai Kallar villages, one in South and the other in North of Madurai District, selectig 200 families. Structured and unstructured interviews and case study will be made.

Commencement—18-1-'75
Completion —January 1980
Degree —Ph.D.

Tamil Nadu Agricultural University, Coimbatore

112. A study of socio-economic

changes in farming families cultivating horticultural crops as flowers, vegetables, banana and grapes in Coimbatore District.

To assess the socio-economic changes in such farming families and to study the attitude of farmers towards adopting improved crop varieties and other agronomic practices—the psychology behind the adoption and the sociological changes.

Commencement—July 1973
Completion —July 1975
Degree —Nil.

113. Socio-economic status and academic achievement of students under trimester system of education.

To stratify students into socio-economic group and grade their academic performance under the trimester examination system and to correlate their socio-economic background to their performance.

For the study students were classified into four groups on the basis of weighted scores for socio-economic environment comprising of community, parents' education, occupation and income. Data collected through a schedule from 122 students and their performance in the first year, P.U.C. and S.S.L.C. studied.

Commencement—February 1975
Completion —March 1975
Degree —Nil.

114. A study of sociological implications of off-farm migration.

To study socio-psychological courses of off-farm migration and the attitude of the migrated farm labour towards agriculture and industry.

Samples of migrant textile mill workers who were cultivating small farms and/or are agricultural wage-earners from 8 textile mills around Coimbatore city were studied.

Commencement—1-9-'74
Completion —31-8-'75
Degree —Nil.

ANTHROPOLOGY

University of Madras

115. Polity and Kinship.

To study the intra-village and inter-village relationships with reference to kinship and political organisations, to unmark the social facts responsible for multiplication of the kin groups of an ethnic group, Kallars, to record the changes in the village life after independence and to evolve theories and concepts by studying 18 non-Brahmin villages in West Thanjavur.

A diachronic study to trace the changes in village life; an ethnographic survey proposed to enumerate the facts pertaining to people and their material culture and a geneological map of the people to be prepared. Participant observation along with interview technique and use of available records to be made use of for data collection.

Commencement—1-10-'75
Completion —31-9-'76
Degree —Ph.D.

LINGUISTICS (Tamil)

Haji Karutha Rowther Howdia College Uthamapalayam, Madurai District

116. Episodes in Kambaramayanam.

To give a precise and general description and definition of Episodes, their place in literature, and their effective role in the main story.

Employment of statistical methods for the collection of various types of episodes and their effects both in Kambaramayanam and the great works of other authors with a view to establishing the function of episodes in the building up of the main theme.

Commencement—July 1972
Completion —July 1980
Degree —Ph.D.

DEMOGRAPHY

Office of the Registrar General, India. Directorate of Census Operations.

117. Analytical studies on sample registration scheme.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6 Page S. 21.

118. Intensive study of selected towns —18 towns in Tamil Nadu and one in Pondicherry selected.

To study the growth of towns in the context of transformation of the rural societies of Tamil Nadu and growth history of towns and its various institutions.

Normative and statistical approaches are made. Field data being collected by household schedule, Institutional schedule, Commercial and institutional establishment schedule, etc., besides discussions with town elites, administrators, academicians. Records also used.

Commencement—1973
Completion —In progress
Degree —Nil.

119. Re-study of villages.

Aims to get an insight into the parameters into the socio-economic structure of a village and the dynamics of emergence, persistence and change of the various elements of structure through the interplay of various psycho-social, techno-economic and political forces.

Micro-study. Four villages in Tamil Nadu and two in Pondicherry to be studied in a phased manner. Villages Ayyangarkulam and Vilangulam already studied. Field data collected by household and village, scheduled group discussions with Panchayatdars and Administrators also employed.

Commencement—1973
Completion —In progress
Degree —Nil

PHILOSOPHY

The New College, Madras.

120. A critical study of Utilitarianism.

Sociological perspectives in Utilitarianism. This theory, though philosophically debatable, has a sound sociological basis. The main currents of utilitarianism are needed and people oriented.

A deductive approach and partly statistical.

Commencement—Jan. '68
Completion —July '77
Degree —Ph.D.

PHYSICAL EDUCATION

Maruthi College of Physical Education Coimbatore.

121. Job analysis of Physical Education teachers in High Schools in Salem Education District.

To analyse the duties of the Physical Education Teachers in Salem Education District. A questionnaire was circulated among the 110 teachers. It was found that the teachers were frequently doing the duties regarding maintenance of attendance register and discipline and 28.18 per cent found it difficult.

Commencement—July 1974
Completion —April 1975
Degree —Master of Physical Education

122. The influence or practising with an Arch Builder on the performance of shooting in basketball.

To determine the influence of practising with an arch builder on the performance of shooting in basketball. 45 students of the Maruthi College of Physical Education were selected by random sampling. On the basis of a test in shooting administered to the subjects, 3 groups were formed. 18 practice sessions were held and then tested for intra group and inter competitions. Out of the 3 groups, the Control group practised without the arch builder and the two experimental groups with arch builders. It was found that group B significantly improved at 0.05 level.

Commencement—July 1974
Completion —April 1975
Degree —Master of Physical Education

123. A study of training for speed through chasing Motor Bicycles.

To find out the effect of chasing motor bicycles at speed. The study was confined to 30 men students of Maruthi College. Students were divided into two parallel groups namely control and experimental—the former practising without chasing the motor bicycle and the latter with. The result obtained shows that chasing the motor bicycle improves speed remarkably on certain subjects.

Commencement—July 1974
Completion —April 1975
Degree —Master of Physical Education

124. A study on practice of health habits among students of eleven through thirteen years of age in residential and non-residential institutions in Vidyalayas.

To find out the health habits among students in the age group 11 to 13 years in residential and non-residential schools of the Vidyalaya. A questionnaire was administered to students in one residential and one non-residential school. In general boys in residential schools possess good health babits, better habits of personal hygiene and environmental hygiene and reading habits.

Commencement—July 1974
Completion —April 1975
Degree —Master of
Physical Education

125. Effects of remedial exercises on postural defects such as flat foot, scoliosis, hyposis and Lordosis. For the the study twenty male students each from the postural defects groups were selected from 2 schools as subjects. They were tested by the New York posture rating chart test before and after exercise. There was significant improvement in selected defects after exercise.

Commencement—July 1974
Completion —April 1975
Degree —Master of
Physical Education

126. The effect of 10,000 M. cycling on red blood cells and white blood cells.

To study the effect of 10,000 M. cycling on RBC and WBC pulse rate, vital capacity and breath holding capacity. 30 men students of Maruthi College were selected. The control group was free from cycling training the experimental group put into cycling training and tested. On analysis of the data, it was found that there was significant improvement in Red blood cells, vital capacity and breath holding.

Commencement—July 1974
Completion —April 1975
Degree —Master of
Physical Education

127. An analysis of defensive and offensive pattern in Kabadi.

Data was collected from 25 matches in the State Kabadi competition in Tanjore District and 218 of the participants were asked to reply a questionnaire. It was concluded that the combination move (stride. astride, position combined) was widely used for success.

Commencement—April 1974
Completion —April 1975
Degree —Master of
Physical Education

128. The effect of practice of selected Asanas on energy expenditure.

Twenty students after initial test were given training in selected asanas. Their energy expenditure was recorded with the help of Benedict Roth Spiro—meter. It was found that selected asanas would lead to less energy expenditure and economic breathing.

Commencement—July 1974
Completion —April 1975
Degree —Master of
Physical Education

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Printed by Aslami Printers, Arunachalapuram, Adyar, Madras-600020.
Editor : Dr. Malcolm S. Adiseshiah.